TEST REQUEST FORM

Sample/Specimen !	10. <u>0-055</u>	Cost Code/Work Order No. ED 332
Requested By: On	rg. <u>80232</u>	Person J. LIND BERG Date Z-12-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
Hydromerex		ETAL-O7 (IF REP)
MOISTURE		ETAC-14
ALL	NA	NIV
	•	
Remarks Fiews	Sambre	Received By: R.G. NEXAMORE Date 2-2-90 Approved By: 12.6 Alexamore Date 2-12-90



							
<u>.</u>			SIEVE ANAI	YSIS DAT			
	Sampl	e ID <u>0-0</u>) <i>55</i>		Page/_	of/_	
	Tes	sted By/	R.G Alexan	/Der I	ate 2:12-9	9	
Procedure ETAL-07 Rev / Date Issued //-/5-89							
		EQUIPME	NT ITEM CAI	LIBRATION N	O. DATE I	UE	
		Balance		3364	3-25	90 90 CM 2-3	1-70
		Thermome		0007 N/A	8-16-	· X 0	
	[N/A		N/M	SIA		
Sampl	le Desc	ription	SANOY GRA	IVEL	- Sieve Tir	me <u>/O</u> (n	nin)
	reduced	lby 💢 s	plitting [quartering	: 🔲 stockp	ile	
BEF	(B) ORE TI	est wt. <u>M</u>	AFTER TE	(A) ST WT. N/A	$\frac{B-A}{B}X \ 100 = \frac{A}{A}$	% zoss	
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative %	% Pass
Number	Size	Weight	Retained (g)		Retained	Pass	
./4	3 21/2	4533.05		23.2	<i>8</i> 3.2	76.8	76,8
NA			1051.50	23.2 23.2	23.2 25.2	76.8	76.8
	11/2		1051.50	23.2	23.2	76.3	76.8 76.8
	J		1545.88	34.1	34.1	45.9	65.9
	3/4		1704.79	37.7	37.7	62.3	62.3
	1/2		1881.35	41.5	415	58.5	58.5
	3/8		1980,21	43.7	<u>43.7</u>	54.3	56.3
	#4	4	2224,32	49.1	49.1	50.9	50.9
	#10	4533.05	2565.47	56.6	56-6	43.4	43.4
	#40	115.01	33.1/	28.8	28.8	71.2	30.9
	#60		52·2S	45.4	45.4	54.6	23.7
	#100		69.00	60,0	600	40.0	17.4
y	# 200	*	83.30	72.4	72.4	27.6	12.0
Finess Modules (FM) (See ASTM C 136-83, Section 8.2)							
MATERL	ALS FIN	NER THAN	NO. 200 SIE	VE BY WASE	IING		
C=Percentage of Material Passing a 200 Sieve 27.6 % Remarks							
D=Original Dry Weight of Sample //S.ol g							
E=Dry Weight of Sample After Washing/Sieve 8330g SMAU FIELD SAMALE							
$C = \langle (D-E)/D \rangle \times 100$							
A T			URATELY AND	COMBLEGE	IV PROOPER	סמות מצוות (
OP	ERATO	R WAS TR	AINED AND U		ATED INSTRU	MENTS	1
Checked By #LBenny Date 2-13-90							

\$

S

0

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 6007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-055	5504.09	5389.61	856 56	4449.53	4538.05	2.57
,						
						<u></u>
						
						· · · · · · · · · · · · · · · · · · ·
 			\times			
					· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·						
				<u> </u>		

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G ALEXANDER

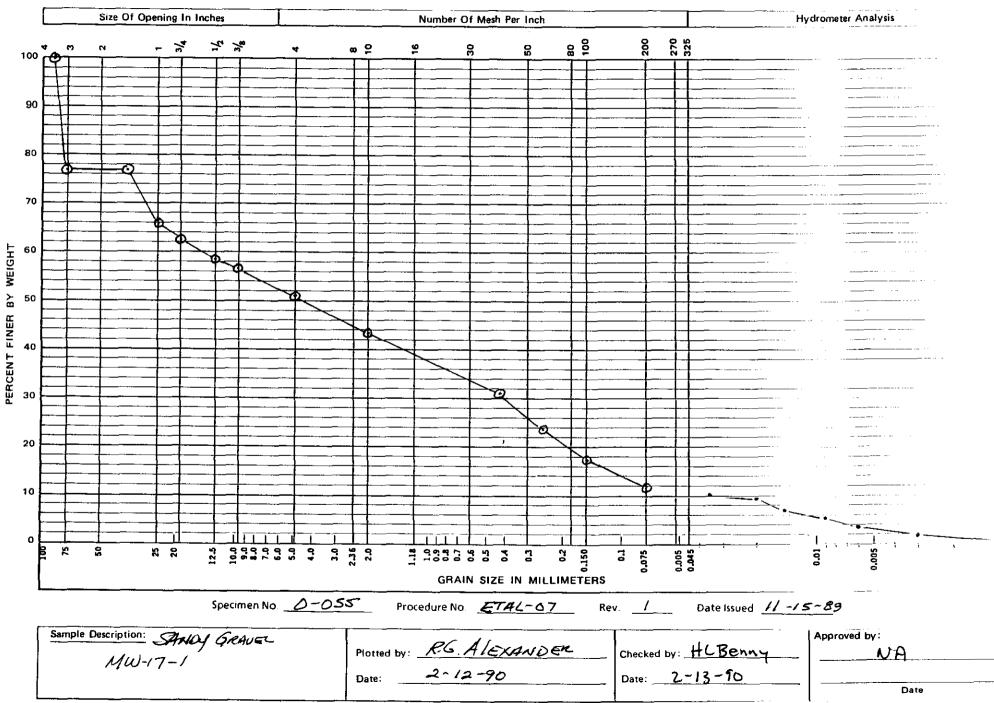
DATE 2-12-90

HYDROMETER ANALYSIS DATA SHEET									
Sample II	0-	055		Page	_/_of_/	_			
	1	Tostad By H/	Bouns	Date 3/8/	190				
			RevDa						
·		504100	ACAIT 17544		IRATION				
		1	MENT ITEM		DATE				
				3304 3-					
		Thermomete	r/Thermocouple	0002 2-	9-91				
Specific gravity of Sample 2.74									
% Passii	ng No. 10 :	Sieve	(%)	HYGROSCOPIC I					
Hygroso	opic Corre	ection Factor	<u>Ø</u>	Wt. Container + Air Dr	<u>-</u>				
			,	Wt. Container + Oven l		•			
<u>[</u>	<u> </u>	/EIGHT OF SAM		Wt. Container			i		
Wt. Con	itainer + :	Soil	<u>/U/A</u> (g)	Water Content	UA	(9	%)		
Wt. Con	tainer		<i>NA</i> (g)	RF	<u>REMARKS</u>				
Wt. Soil		· · .	<u>67.93</u> (g)						
ļ	COM	POSITE CORRE	CTION	Tube A	 				
	\ <u></u>			W=156,52					
			<u>24,2</u> °c			· · · · · · · · · · · · · · · · · · ·			
2nd Re	ading	<u>///</u> at	<i>NA</i> °c						
					- 				
L									
Date	Clock	Elapsed time	Hydrometer	Hydrometer with	Temp.	Soil in suspension	Particle diameter		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	time	(min)	reading	composite correction	(°C)	(%)	(mm)		
3-8-90	0837	2.0	24	1741 HUB 90	23.0	10.6.	0.032		
	0840	5.0	22	15	22.8	9.4	0.020.		
	0850	15.0	18	116	22.7	6.9.	0.012.		
	0905	30.0	16	9	23.4	5.6	0.009		
	6935	60.0	13	6	22,5	3.8	0.006		
V	12 45	250 00	10	3	22.7	1.9.	0.003		
3-9-90	0835	1,440.0	8		22.4	0.6.	0.001 .		
Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D42							M D422.		
1	ALL REQUI	RED DATA ARE ACC	URATELY AND COMPLETEL	Y RECORDED. THE TEST OPERATO	R WAS APPROI	PRIATELY	,		
	TRAINED	ND UTILIZED CALIB	RATED TEST INSTRUMENTS	AS INDICATED ABOVE. APPROVE	D TEST PROCED	URES WERE			
	Checked By	, R.G. AL	efande	Date 3-14-	90				

SPECIFIC GRAVITY OF SOILS DATA SHEET

Test Operator	R.G. A LEXANDER	3	3-5-90		
EQUIPME	ITITEM	NO.	DATE DUE		
Balance	330	04	3-25-90		
Oven Thermome	ter 00		8-16-90		
Thermometer		٥2	2-9-91		
Pycnometer	2 <i>5</i> 5	4	N/A		
Wetting Agent	"Q" WATER				
	DETERMINATION NO.	1	2	3	
Drying Con	ainer No.	N/A	N/A	N/A	
Wt. Contain	er + Oven Dry Soil, ± 0.01g	NA			
Wt. Contain	er, ± 0.01g	NA	·	۸	
W _o Wt. Oven D	ry Soil, g	५० .००			
Pycnomete	· No.	2554			
Wt. Pycnom	eter, g	135 .72			
W _a Wt. Pycnom	eter + Wetting Agent, g	387 · LL			
W _b Wt. Pycnom	eter + Wetting Agent + Soil, g	412.58			
	re, T _x at W _b , °C	26.2 C.			
G _w Specific Gra	vity of Wetting Agent at T _x	1.00			
G _t Specific Gra	vity of Soil at T _x	2.7.5			
G, Specific Gra	vity of Soil at 20°C	2.74	V)	
$C_t = \frac{G_{w^{\bullet}} Y_{w^{\bullet}}}{W_o + (W_a)}$	W _o W _h)				
y _w = Unit Weight (*G _s = K•G _t	Of Water (g/cc)	Average Spec	Average Specific Gravity At 20°c		
,	5TM D854-58, Table 1	<u></u>	· ·		
* <u>NOTE</u> G, = G, Who	en Test Run at 20 °c	*			
RAINED AND UTIL	A ARE ACCURATELY AND COMPLETEL ZED CALIBRATED TEST INSTRUMENTS O PRODUCE THE ABOVE DATA.	AS INDICATED ABOVE. AP	PERATOR WAS APPROP PROVED TEST PROCEDO te 3-7-90	RIATELY URES :	

GRAIN SIZE ANALYSIS PLOT



Westinhouse Hanford Company	CHAIN C	CHAIN OF CUSTODY		
Company Contact JW Lind	berg Telepho	one 6-5005		
Sample Collected by DC Weekes		≥/90 Time <u>NA</u>		
Sample Locations <u>MW-17</u>				
Ice Chest No. NA	Field Logbook and Pa	ge No. WHC-N-306-2, p.27-35		
Remarks CERCLA, 1100-EM-	1 Operable Unit, Gro	undwater Monitoring		
Wells	7			
Bill of Lading No.	Offsite Property No.	NA		
Method of Shipment Hand Carry				
Shipped to Verry Alexander, W	IHC 2101-M Physiag/ Te	sting Laboratory		
J J	Sample Identification			
MW-17-1 double-lined plastic	ba			
MW-17-2 " " "	- 199			
MW-17-3 " " "	"			
MW-17-4 " " "	,,			
MW-17-5 " " "	11			
Mul-17-6 " " "	"			
MW-17-7 " " "	"			
MW-17-8 " " "	//			
MW-17-9 ""	, ;			
MW-17-10 " " "	"			
MW-17-11 " " "	**			
MW-17-12 triple-lined plas	tic bag			
	Chain of Possession			
Palianciand hus 182	 	Date/Time:		
Relinquised by: A gelles Re	RG Alfund			
	•	2-2-90/10:20 Date/Time:		
Remiquised by:	eceived by:	Josephine.		
Relinquised by:	eceived by:	Date/Time:		
Relinquised by:	eceived by:	Date/Time:		

SAMPLING ANALYSIS REQUEST

Part I: F	Field Section			
Collector	DC Weekes	Date Sampled	<u>////90</u> Time	NA hours
Affiliatio	on of Sampler $\underline{\mathit{WHC}}$	2		
Address	450 Hills St.	Richland	WA	99352
		· · · · · · · · · · · · · · · · · · ·		•
Telephone	(569) 376-5005	Company Contact 🔍	J.W. Lindbe	<u>erg</u>
LABORATORY	,			
SAMPLE	COLLECTOR'S	TYPE OF		
NUMBER	SAMPLE NO.	SAMPLE*	FIELD INFORMA	TION**
	mwfl	Soil_	**************************************	
	mw#2			
	MWH3	ų		
				-
	mw174			· · · · · · · · · · · · · · · · · · ·
Analysis R	equested <u>Particle</u>	Size Analysis	and Moistur	re Contents
			•	
Special Har	ndling and/or Storage			
				•
PART II: [LABORATORY SECTION**			·.
Received by	y	Title	Dat	e
	equired			
* Indicate **Use back	whether sample is so of page for addition	il, sludge, etc. al information rela	tive to sample l	ocation.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date September 1986

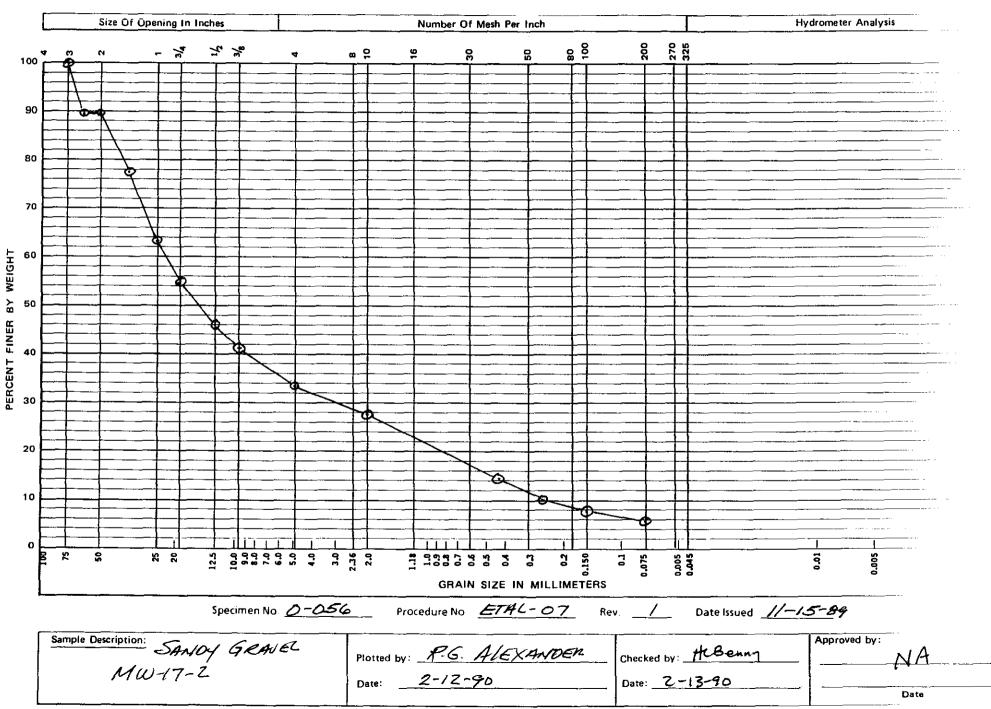
The state of the s	
RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-90	and a sure
Roud	DATE 01-11-90
RELEASED BY RADIATION MONITORING	RELEASED BY
REMARKS: (DA) STORE	RADIATION MONITORING
	REMARKS: 4D & 84 OUTSIDE BF
OF BAG. ANIAST	EAG.
54-3000-022 (5 - 57)	. 54-3000-022 (5 - 57)
1010617-3	
MURADIATION RELEASE	RADIATION RELEASE
- WEG SIZE #19 Date 01-11-90	No.
	10 10 10 10 10 10 10 10 10 10 10 10 10 1
Released By Operational Health Physics	Released By Operational Health Physics
Remarks DAX + NO SITE	Remarks D& Y = ON OUTSIDE OF
OF BAG	BAG.
54-3000-022 (09/88)	MW-17-4 54-3000-022 (09/88)
M MUST TO BELEASE	MW-17-6
NADIATION RELEASE	RADIATION RELEASE
Blade 1/2-90	21dg. WELL#/3 Date 0/-12-90
Released By Operational Health Physics	Released By Say
- Remarks DA Land Sulfalla	Remarks Operational Health Physics
Remarks - John Manual	Hermarks
54-3000-022 (09/88)	54-3000-022 (09/88)
MWATATON RELEASE 37-38	PRINT RADIATION RELEASE
	1 5 1
Date 01-12-90	T. MW-17/300 Decembrate 1/19/96
Released By Boro	leased By Constituted House
Remarks De Operational Health Physics	Remarks ZD B - Q - Y
Remarks SDF & DW OUTSIDE	
54-3000-022 (09/88)	54-30 - 22 (09/88)
3-3000 022 (03/00)	1.1M~[_D
New York Control of the Control of t	

TEST REQUEST FORM

Sample/Specimen 1	No. 0-056	Cost Code/Work Order No. ED332
Requested By: On	rg. <u>80</u> 232	Person J. CINDRERG Date Z-12-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIBUE ANMYSIS		ETAL-07
HYDROMETER	/	ETAL-07 (IF REQ)
Mustores		ETAL-14
<u> </u>	NA	N/A
	•	
Remarks FIEWS	SAMPLE	Received By: R.G. Alexanosc Date 2-2-90 Approved By: R.G. Alexanosc Date 2-12-90

			SIEVE ANAL	YSIS DAT	A SHEET		
	Sampl	e ID <u>Ø</u> -	056		Page/_	of/_	
	Te	sted By_/	G. ALEXAN	DEK I)ate Z -/Z -	90	
	Dw		E714-07 D	_ / .		. (, - , - , - , - , - , - , - , - , - ,	
	FT	ocedure	ETAK-07 Re	V <u>/</u>	Date Issued <u>/</u>	773-09	
		EQUIPME	NT ITEM CAI	IBRATION N	NO. DATE I	UE	
		Balance		3304	3-25-		
		Thermome		0007	8-16-		
Sampl	le Desc	eription	SANDY BR	AUEL	- Sieve Tir	ne <u>/O</u> (r	nin)
	reduced	i by 💢 s	plitting }		: □ stockp	ile	
BEF	(B) ORE TI	est wt. <u>4/</u>	4 AFTER TE	(A) ST WT. 4/A	$\frac{B-A}{B}X \ 100 = -$	N/4% LOSS	
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative %	% Pass
Number	Size	Weight	Retained (g)	1	Retained	Pass	
N/A	2/2	4541,36	478.14	10.5	10.5	89.5 89.5	89.5
1	1/2		478.14		10.5		
	1/2		1027.06	22.6	22.6	77.4	77.4
- -	7/	 	1665.32	36.7	36.7	43.3	63.3
	3/4		2068,79	45.6	45.6	54.4	54.4
	1/2		2452.06	54.0	54.0	46.0	46.0
	3/8		2681.31	59.0	59.0	41.0	41.0
	#4	4	3017.66	664	664	33,6	33.6
	#10	4541.56	3185.60	72.3	72.3	27.7	27.7
	#40	136-73	66.19	48.4	48.4	51.6	14.3
	#60		86.82	63.5	63.5	36-5	10.1
	#100		98.05	71.7	71.7	28.3	7.8
1	# 200		108.07	79.0	79.0	21.0	5.8
		Modules (FM			36-83, Section		
MATERI	ALS FI	NER THAN	NO. 200 SIE	·			
			sing a 200 Siev		Remar		
D=Original Dry Weight of Sample 134.73 WASH FINE GRADING							
E=Dry Weight of Sample After Washing/Sieve 108.07 g SAMPLE							
<u> </u>	c = <	(D-E)/D> X	100	_		<u> </u>	
			URATELY AND				T
			AINED AND U	SED CALIBR			
	recked	By HCB				2-13-90	
						-6400-204(2-87)	

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. <u>ETAL-14</u> REV. NO. <u>Ø</u>

THERMOMETER NO. <u>007</u> CALIBRATION DUE DATE <u>8-16-90</u>

<u></u>						
SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-056	5456.48	5377.32	835.76	4620.72	4541.56	1.74
			-			
						·.
		· · · · · · · · · · · · · · · · · · ·				
			L		!,	

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

RG ALEXANDER TEST OPERATOR:

DATE Z-/2-90

Westinhouse Hanford Company	CHAIN	CHAIN OF CUSTODY		
Company Contact JW Line	berg Teleph	one 6-5005		
Sample Collected by DC Weeke		0/90 Time NA		
Sample Locations MW-17	, , , , , , , , , , , , , , , , , , ,			
Ice Chest No. NA	Field Logbook and Pa	age No. WHC-N-306-2, p.27-35		
Remarks CERCLA, 1100-EM	-1 operable Unit, Gro	undwater Monitoring		
Wells	, , , , , , , , , , , , , , , , , , , ,			
Bill of Lading No	Offsite Property No.	NA		
Method of Shipment Hand Carry	,			
Shipped to Verry Alexander, L	WHC 2101-M Physia 7	esting Laboratory		
	Sample Identification			
MW-17-1 double-lined plast	ic to			
MW-17-2 " " "				
MW-17-3 " " "	"			
MW-17-4 " " "				
MW-17-5 " " "	,,			
MW-17-6 " " "	"			
MW-17-7 " " "	//			
MW-17-8 " " "	"			
MW-17-9 "				
MW-17-10 " " "	· //			
MW-17-11 "" ""	i e			
MW-17-12 triple-lined pla	stic bag			
	Chain of Possession			
Relinquised by: Make bond F		Date/Time:		
DC Weekes	Received by: RG. Alexander			
	Received by:	Z-2-90 / 10:20 Date/Time:		
Keimquised by.	received by.	Date/Time.		
Relinquised by:	Received by:	Date/Time:		
Relinquised by:	Received by:	Date/Time:		

SAMPLING ANALYSIS REQUEST

Part I: Field Section
Collector Dc Weekes Date Sampled 1/1/90 Time NA hours
Affiliation of Sampler WHC
Address 450 Hills St. Richland WA 99352 number street city state zip
Telephone (59) 376-5005 Company Contact U.W. Lindberg
LABORATORY SAMPLE COLLECTOR'S TYPE OF NUMBER SAMPLE NO. SAMPLE* FIELD INFORMATION**
mwff soil
MWF3
Analysis Requested Particle Size Analysis and Moisture Contents
Special Handling and/or Storage
PART II: LABORATORY SECTION**
Received by Title Date
Analysis Required
* Indicate whether sample is soil, sludge, etc. **Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date September 1986

RADIATION RELEASE	RADIATION RELEASE
DEN SITE #17 DATE 01-11-90	DATE 01-11-90
RELEASED BY RADIATION MONITORING	RELEASED BY
REMARKS: < DAY STOP OUTSIDE	REMARKS: DE STORY OUTSIDE BE
OF BAG. MU-17-1	BAG. MW-17-3
54-3000-022 (5 - 57)	54-3000-022 (5 - 57)
MWRADIATION RELEASE	RADIATION RELEASE
1 Date 01-11-90	1849. WELL SITE#17 Date 01-11-8-90
Released ByOperational Health Physics	Released By Operational Health Physics
Remarks DEX SUBSIDE	Remarks DB 8 ~ ON OUTSIDE OF
54-3000-022 (09/88)	395. MW-17-4 54-3000-022 (09/88)
O MW-17-5 RADIATION RELEASE	RADIATION RELEASE
But 11 Date 01-12-90	11 Date 0/-12-90
Released By Operational Health Physics Remarks Syntholia	Released By Operational Health Physics Remarks
54-3000-022 (09/88)	side of bag. 54-3000-022 (09/88)
NA. 1 . Z — 1 . 3	
RADIATION RELEASE 37-38	DRIVE RADIATION RELEASE
Bids (2151 # 17 Date 01-12-90	F MW-17/3000 Ansobate 1/19/96
Released By Operational Health Physics	Operational Health Physics
Remarks SDF & ON OUTSIDE	Remarks LD B-Q -1 4
OF DAS. 54-3000-022 (09/88)	54-39 (65)22 (09/88)

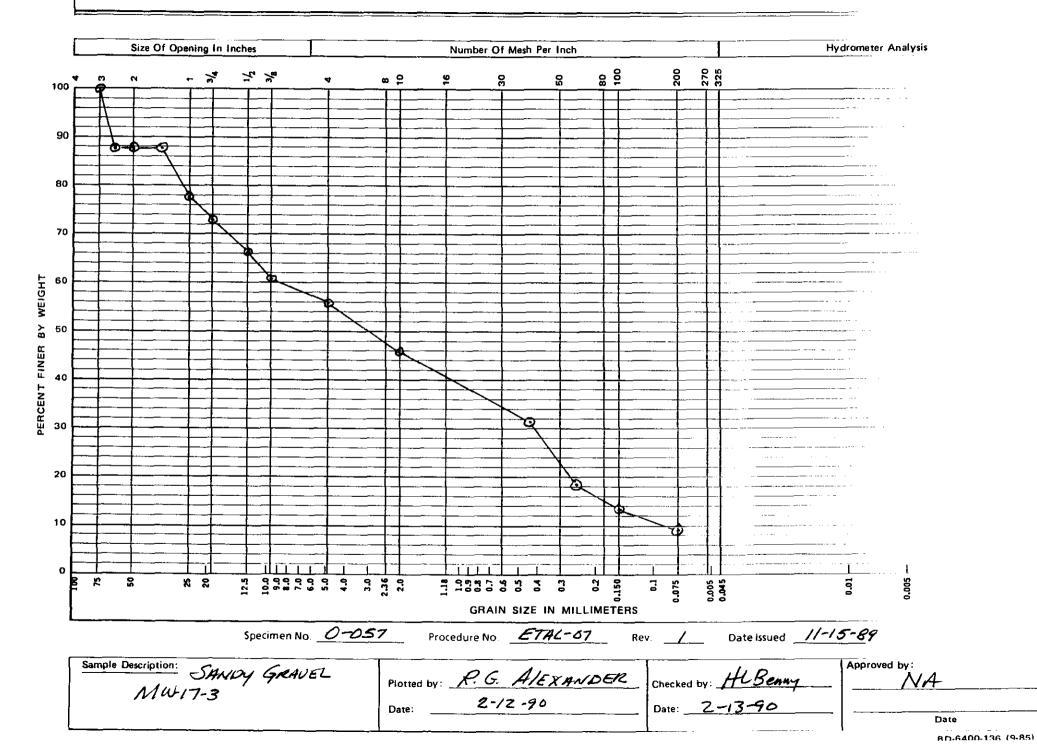
TEST REQUEST FORM

Sample/Specimen No	· <u>D-057</u>	Cost Code/Work Order No. 60-332
Requested By: Org	. <u>8023</u> 2	Person J. LNDBERG Date Z-12-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEUE ANALYSIS		ETM-07
MOROMETER		ETAL- OT (IF RED)
Moisturze		ETAL-14
NIA		NIA
	•	
Remarks FIELD SA	mple	Received By: R-GALEXANDER Date Z-Z-90
/NW 17-5		Approved By: R.G. ALEXANDER Date 2-12-90

· · · · · · · · · · · · · · · · · · ·							
			SIEVE ANAI	LYSIS DAT			
		e ID <u>O</u> -			Page/		<u> </u>
	Tes	sted By <u>K</u>	? G. Alexi	ander i	Date 2-12-	90	
	Pr	ocedure_E	ETAL-07 Re	v <u> </u>	Date Issued_	1-15-89	
		EQUIPME Balance Thermome		LIBRATION N 3304 0007 N/A	NO. DATE D 3-25 8-16	-90 -90	
Sampl		. ,			— Sieve Tir		nin)
	/p\			/A\	stockp		
BEF	ORE TI	est wt.	AFTER TE	ST WT. N/A	$\frac{B-A}{B} \times 100 = \Delta$	✓A % LOSS	- _r
Sleve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative %	Cumulative 7 Pass	% Pass
N/A	21/2	4559.53	57/.33 57/.33	12.5	12.5	87.5 87.5	87.5 87.5
<u>~//s</u>	11/2		571.33	12.5	12.5	87.5 87.5	87.5
	1		1012.69	22.2	22.2	77.8	77.8
	3/4		1245.58	273	27.3	12.7	72.7
	1/2		1542.47	33.8	33.8	66.2	66.2
	3/8		1799.25	39.5	39.5	60.5	60.5
	#4		2012.26	44.1	44.1	55.9	55.9
	#10	4559.53	2477.84	54.3	543	45.7	45.7
	#40	128.74	40.51	3/.5	31-5	68.5	31,3
	+ 60		77.68	60.3	60.3	39.7	18.1
	#100		91-73	71.3	7/.3	28.7	13.1
4	* 200	1	102.71	19:8	79.8	20.2	9.2
		Modules (FM	/ A	· 	36-83, Section		J
MATERI	ALS FII	NER THAN	NO. 200 SIE	VE BY WASE	IING		
C=Percen	tage of	Material Pas	saing a 200 Siev		Remark	es Fine Gr	A D. W.
_	_	eight of San	-	168.74 "		FIED	ADING
E=Dry We			r Washing/Sieve	2/02.7/ g	MAR	PCE	
		(D-E)/D> X				······································	 _
OF	PERATO		AINED AND U		LY RECORDEI ATED INSTRU Date		T
						-8400-204(2-87)	-

O

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL- 14 REV. NO.

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-057	5514.24	5389,(1	829.58	4684.66	4559,53	2.74
					<u> </u>	
					· · · · · · · · · · · · · · · · · · ·	
					· · · · · · · · · · · · · · · · · · ·	

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

R.G ALEXANDER TEST OPERATOR:

DATE 2-12-90

Westinhouse Hanford Company	CHAIN OF CUSTODY			
Company Contact JW Lindb	erg Telephone 6-5005			
Sample Collected by DC Weekes	Date 1/11/90 - 1/20/90 Time NA			
Sample Locations MW-17				
A11	Field Logbook and Page No. WHC-N-306-2, p. 27-35			
Remarks CERCLA, 1100-EM-1	operable Unit, Groundwater Monitoring			
Wells				
Bill of Lading No. NA	Offsite Property No. NA			
Method of Shipment Hand Carry				
Shipped to Verry Alexander, WH	1C, 2101-M Physical Testing Laboratory			
	Sample Identification			
MW-17-1 double-lined plastic	hao			
MW-17-2 " "	"			
MW-17-3 " " "	"			
MW-17-4 " " "	"			
m MW-17-5 " " "				
MU-17-6 " " "	п			
MW-17-7 " " "	//			
MW-17-8 " "	"			
MW-17-9 ""				
MW-17-10 " ""	1/			
MW-17-11 "" ""	11			
MW-17-12 triple-lined plasti	c bag			
~				
Bolinguises by MAZ	Chain of Possession			
Relinquised by: Malekee Rece	eived by: RG. Alexanoez Date/Time:			
	2G Alefand 2-2-90/10:20 eived by: Date/Time:			
Relinquised by:	eived by: Date/Time: '			
Relinquised by: Rece	eived by: Date/Time:			
Relinquised by: Rece	vived by: Date/Time:			

SAMPLING ANALYSIS REQUEST

	Field Section	
Collecto	or Dc Weekes Date Sampled 1/1/90 Time	NA hours
Affiliat	tion of Sampler WHC	
	450 Hills St. Richland WA number street : city state	99352
		•
Telephone	e (59) 376-5005 Company Contact U.W. Lindbe	?/9
LABORATOI SAMPLE NUMBER	COLLECTOR'S TYPE OF	TION**
	MW173 11 MW174 11	
Analysis	Requested Particle Size Analysis and Moistur	e Contents
Special H	Handling and/or Storage	
PART II:	LABORATORY SECTION**	
	by Title Dat Required	e
	te whether sample is soil, sludge, etc.	ocation

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0
Date September 1986

RADIATION RELEASE	RADIATION RELEASE
NEW SITE #17 DATE 01-11-90	DATE 01-11-90
RELEASED BY RADIATION MONITORING	RELEASED BY JOHN
REMARKS: < D A S CONTSEDE	REMARKS: SO STATE OF
OF BAG. 84-3000-022 (5-57) MW-17-1	BAG. MW-17-2
MWRADIATION RELEASE	RADIATION RELEASE
Released By Sage Date 0/-//- 90	Released By Sand
Remarks DE STORY STORY	Remarks DE S ON OUTSIDE OF
54-3000-022 (09/88)	BAG. MW-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
Released By Sales	Released By Service Date 0/-/2-90
Remarks De La Authorita	Operational Health Physics Remarks 2 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
54-3000-022 (09/88)	54-3000-022 (09/88)
M WATER 37-38	Dire RADIATION RELEASE
Released By Boyd Date 01-12-90	1 10 17 3500 Decembrate 1/19/96
Remarks SDE SUBSIDE	Remarks LD PL -1
OF BAS. 54-3000-022 (09/88)	54-30 (6) 22 (09/88)

TEST REQUEST FORM

Sample/Specimen No.	0-058	Cost Code/Work Order No. ED 332
Requested By: Org	80232	Person J. LNDBERG Date 2-12-90
Test Requested SIEVE ANALYSIS HYDRO HETER MOISTURE N/A	No. of Samples	Test Lab Information (Instruction Used) ETAL-07 ETAL-07 (ET REQ) ETAL-14 N/A
Remarks FIEW Se MW-17-4	MOVE	Received By: R.G. Alexander Date 2-2-90 Approved By: R.G. Alexander Date 2-12-9

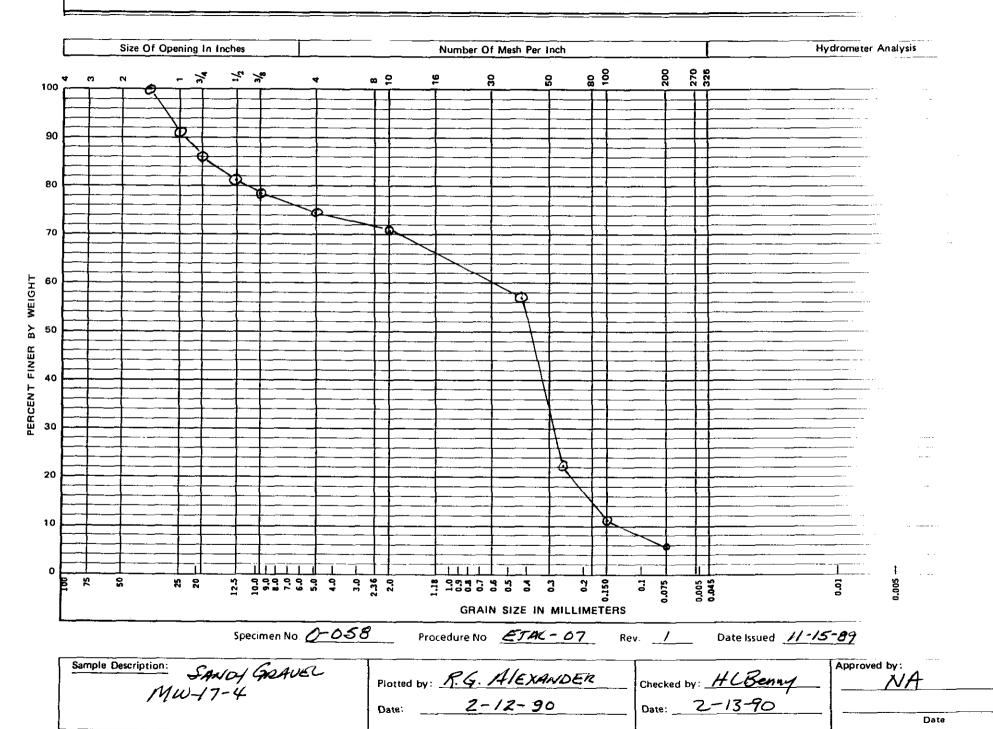
			SIEVE ANAI	YSIS DAT	A SHEET		
	Sampl	.e ID <u></u>	-058		Page _/	of _/	
	Te	sted By_	R.G. Alexan	VDEK I	ate <u>Z-/Z-9</u>	0	
	Pr	ocedure_4	<i>₹744-07</i> Re	י לי	Data Tasuad I	1-15-89	
				·	Date Issueu <u>i</u>	1.007	
		EQUIPME Balance	NT ITEM CAL	IBRATION N			
		Thermome		7000	<u>3-25</u> <u>8-16</u>	-90	
		N/A	·	N/A	<i>\\\</i> /	<u>^</u>	
Sampl	le Desc	ription_	SANDY GRA	wer_	— Sieve Tir	me 10 (r	nin)
	reduced	і ву 💆 :	splitting 1	quartering	: □ stockp	ile	
BEF	(B) ORE TI	est wr. <i>N</i>	AFTER TE	(A) ST WT. <u>U/A</u>	$\frac{B-A}{B}X \ 100 = \frac{A}{A}$	VA % LOSS	
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative %	% Pass
Number	Size	Weight	Retained (g)		Retained	Pass	
NA	Z	4307.37	Ø	Ø	ø	100	100
	11/2		Ø	Ø	ø	100	100
	1		423.80	9.8	9.8	91.2	91.2
	34		601.06	140	14.0	86.0	86.0
	1/2		817.64	19.0	19.0	81.0	81.0
	3/8		931.85	21.6	21.6	78.4	78.4
	#4	1	1108.54	25.7	25.7	743	74.3
	#10	4307.37	1264.26	29.4	29.4	70.6	70.6
	#40	155.49	30.86	19.8	19.8	80.2	566
	#60		10676	68.7	68.7	31.3	22.1
	¥ 100		131.18	84.4	84.4	15.6	11.0
	#200	\	142.66	91.7	91.7	8-3	5.9
	Finess l	Modules (FM	() <u>NA</u> (See ASTM C 1	36-83, Section	8.2)	
			NO. 200 SIE	4	l l		
			ssing a 200 Siev		Remar!	ks Fine Grad	1116
	D=Original Dry Weight of Sample 5549 g						
E-DIY WE		Sample Alte		<u>, , -, </u>			
AL	L DATA	ARE ACC	URATELY AND	COMPLETE	LY RECORDE	D. THE TES	T
OF	ERATO	R WAS TR	AINED AND U		ATED INSTRU	MENTS	
Ch	recked	By #C	Deny		Date	2-13-90	

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. <u>COCT</u> CALIBRATION DUE DATE <u>8-16-90</u>

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-058	5094.71	4885.43	578.06	4514.65	4307.37	4.86
						
						4

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. ALEXANDER

DATE Z-/2-90

Westinhouse Hanford Company	CHAIN OF CUSTODY		
Company Contact JW Lind	berg Telephone 6-5005		
Sample Collected by DC Weekes	Date 1/11/90 - 1/20/90 Time NA		
Sample Locations $MW-17$			
Ice Chest No. NA	Field Logbook and Page No. WHC-N-306-2, p.27-35		
	I Operable Unit, Groundwater Monitoring		
wells			
Bill of Lading No.	Offsite Property No. NA		
Method of Shipment Hand Carry			
	4C, 2101-M Physical Testing Laboratory		
-			
MW-17-1 double-lined plastic	Sample Identification		
MW-17-2 " " "	" "		
MW-17-3 " " "	"		
MW-17-4 " " "			
MW-17-5 " " "	11		
MU-17-6 " " "	И		
MW-17-7 " " "	"		
MW-17-8 " " "	′′		
MW-17-9 "	• 1		
MW-17-10 " ""	11		
MW-17-11 " " "	• (
MW-17-12 triple-lined plast	ic hag		
	Chain of Possession		
Relinquised by: Myseekes Rec	eived by: RG AIEXANDER Date/Time:		
	?G Kefand 2-2-90/10:20		
Relinquised by:	Date/Time:		
Relinquised by: Rec	eived by: Date/Time:		
Relinquised by:	reived by: Date/Time:		

SAMPLING ANALYSIS REQUEST

Part I: Fie	ld Section	·····		
Collector _	DC Weekes	Date Sample	ed <u>1/1/90</u> Time	NA hours
Affiliation	of Sampler WHO	2		
Address 4	50 Hills St.	Richland	WA STATE	99352
			J.W. Lindb	
LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.		FIELD INFORMA	TION**
	mwal	<u>Soil</u>		
	MW #=2			
	MWH3		· · · · · · · · · · · · · · · · · · ·	···
	mw174			
Analysis Requ	uested <u>Particle</u>	Size Analys	is and Moistu	re Contents
			•	
Special Hand	ling and/or Storag	9		
PART II: LAE	BORATORY SECTION**			:
Received by _		Title	Da	te
	rired			
* Indicate wh **Use back of	mether sample is so page for addition	oil, sludge, etc. nal information r	elative to sample	location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NIME - 70

Revision 0
Date September 1986

/ RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-90	
Royal	DATE 01-11-90
RELEASED BY RADIATION MONITORING	RELEASED BY RADIATION MONITORING
REMARKS: LD A Y CONS OUTSIDE	REMARKS: 40 8 SUTSIDE OF
OF BAG. AND TO	BAG.
54-3000-022 (5-57)	. 54-3000-022 (5 - 57)
MWRADIATION RELEASE	
· · · · · · · · · · · · · · · · · · ·	RADIATION RELEASE
- 100 Liter SITE #13 Date 01-11-90	Blog. WELL SITE#/1 Date 01-11-890
Released By Operational Health Physics	Released By Operational Health Physics
Remarks DEX LOW SITES IDE	Remarks & S & S & OW OUTSIDE OF
54-3000-022 (09/88)	BA4. 54-3000-022 (09/88)
	MW-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
Date 0/-12-90	
Released By	Released By Salah Date 0/-/2-90
Operational Health Physics	Operational Health Physics
Remarks S S S S S S S S S S S S S S S S S S S	Remarks 1 8 mout-
54-3000-022 (09/88)	54-3000-022 (09/88)
Mul 17 7 20'00	
RADIATION RELEASE 37-38	DRIVE RADIATION RELEASE
Aldy Colf 17 Date 01-12-90	TEMW-17/3000 AMEDIATE 1/19/96
Released By Bord	Ileased By Operational Health Physics
Remarks De Soprational Health Physics Remarks De Sour SIDE	Remarks LD Pd -
OF BAS.	
54-3000-022 (09/88)	54-30 1-322 (09/88)
the same of the sa	

TEST REQUEST FORM

Sample/Specimen No	0-059	Cost Code/Work Order No. ED 332
Requested By: Org	80232	Person J. LINDBERG Date 2-12-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SLEVE AWALYSIS		ETAL-07
HYDROMETER	1	ETALOT (IF RED)
N/A .	N/A.	~/A
NJA	N)6	NA
Remarks FIELD SON	MDI E	Received By: R.G Alexander Date Z-2-90
MW-17-5		Approved By: RG ALEXANDER Date 2-12-55

			SIEVE ANAL	YSIS DAT	A SHEET				
	Sampl	e ID <u>O</u> -	059.		Page _/				
	Tes	sted By <u>/</u>	G. ALEXAN	ider i	Date <u>2-12-</u>	90			
	Pro	ocedure_	<i>€78K</i> − <i>67</i> Re	v <u>/</u> 1	Date Issued_	11-15-89			
		Balance	ENT ITEM CAL	JERATION N	NO. DATE 3-25 8-16-	OUE -90			
		Thermome	A	N/A		30			
	<u> </u>		5 4.6						
Samp		ription			— Sieve Ti		min)		
			splitting 1						
BEF	ORE TE	est wt. <u></u>	AFTER TE	ST WT. N/A	$\frac{B-A}{B}X 100 = A$	VA % LOSS	 		
Sieve ID	Sieve		Cumulative Wt.	% Retained	Cumulative ?	Cumulative ?	Z Pass		
Number	Size	Weight	Retained (g)		Retained	Pass	<u> </u>		
N/A	N/A								
#10 118.62 Ø Ø Ø 100 1							100		
						92.0			
	#60		43.81	53.8	53.8	46.2	46.2		
	#(=)						24.5		
4	*Z00		102.10	86.1	86.1	13.9	13.9		
		Modules (FM	1/4		36-83, Section		1 2 2 1		
MATERI	ALS FIN	VER THAN	NO. 200 SIE	VE BY WASE	IING	·	· · · · · · · · · · · · · · · · · · ·		
C=Percen	tage of l	Material Pa	ssing a 200 Slev		Remar	ks H FINE			
_	•	eight of San	-	118.62 m		DING.			
E=Dry We		Sample Afte (D-E)/D> X	er Washing/Sieve	102.10g					
			URATELY AND AINED AND US				ST		
		By HC 1				2-12-90	<u>></u>		
<u> </u>						1-8400-204(2-82)			

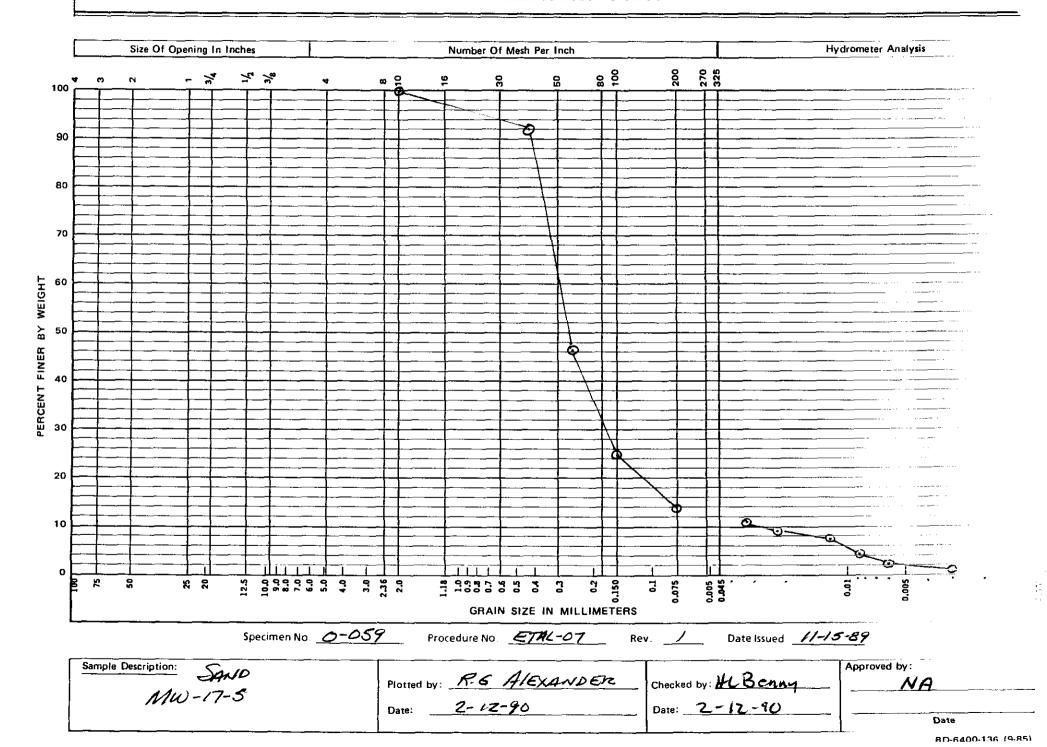
S

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 6007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-059	4603.27	4341.53	584.00	4019.27		7.897 R
						<u> </u>
					/	
					 	
					·	<u> </u>
					· · · · · · · · · · · · · · · · · · ·	
						
						
/	-					

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. ALEXANDER

DATE 2-12-90

	HYDROMET	FR ANA	LYSIS	DATA	SHEET
--	----------	--------	-------	------	-------

Sample I	DO	-059		Pag	ge <u> </u>	<u></u>			
	Į.			Date 3			ł		
		Procedure <u>ETA</u>	L-07 Rev [Date Issued 11-15-89			}		
		EQUIPM	BENT ITEM		LIBRATION DUE DATE				
		Hydrometer	··	1000 2	Z-14-90				
		Balance		3304	3.25-97	}			
	l	<u>Thermomete</u>	r/Thermocouple	000 1	2-9-91				
Specifi	ic gravity o	f Sample2	.74	HYCROSCODI	CNACISTURE	CONTENT	·		
% Pass	ing No. 10:	Sieve	(%)	HYGROSCOPI		,			
Wt. Container + Air Dry Soil N/A (g) Hydroscopic Correction Factor N/A							3)		
, , , g. v.	. сорго облас			Wt. Container + Ove	n Dry Soil	<u>~/ </u>	9)		
	. <u>v</u>	EIGHT OF SAM	PLE	Wt. Container	N/A	(g) ·		
Wt. Container + Śoil ۸/۸ (g) Water Content ۸/۸ (%)							%)		
Wt. Container // (g)									
Wt. Soil 96. 67 (g) REMARKS							İ		
VV (. 30			<u>/ • · • · · · · · · · · · · · · · · · · </u>						
COMPOSITE CORRECTION TUBE D									
1st Rea	ading	_ 5 at	23.6 °c						
		N/A at							
ZIIG IX					<u> </u>		·		
		-							
4									
Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)		
3-20	1002	2.0	16	//	23.8	11.2	0.033		
3-20	1005	5.0	14	9	23 8	9.1	0.021		
3-2.	1015	15.0	/2	7	z <i>3.</i> 7	7.1	0.012		
3-20	1030	30.0	9	4	23.8	4.1	0.009		
3-20	1100	60.0	7	2.	23.7	2.0	0.006		
3-20	1410	250.00	4	/	24.5	1.0	0.003		
3-2/	1000	1,440.0	4	/	73.2	1.0	0.001		
Formulas	s and Tables u	sed to calculate per	cent Soil in suspension, p	article diameter and hygroscopic	correction factor	are found in AST	ΓM D422.		
	<u></u>								
	TRAINED	RED DATA ARE ACC ND UTILIZED CALIB) TO PRODUCE THE	RATED TEST INSTRUMEN	TELY RECORDED. THE TEST OPERA ITS AS INDICATED ABOVE, APPRO	NTOR WAS APPROVED TEST PROCE	OPRIATELY DURES WERE			

Checked By_

SPECIFIC GRAVITY OF SOILS DATA SHEET

Spe	cimen/Sample No.	0-059		Pag	ge <u>1</u>	of1		
Test	Operator R.G A	IEXANDER		3-6	-90			
	EQUIPMENT ITEM	_NC	<u>).</u>		<u>D/</u>	ATE DUE		
Bala	ance	3304	3-25-98					
	en Thermometer	8-16-90						
	rmometer nometer	000 2 2554			2-9-9 N/A	} (
	ng Agent "Φ" WΔ		·····		10/14			
	<u></u>		1		,	2		3
	DETERMINATIO Drying Container No.	N NO.	~/A		_ 21		- 01/10	
	Wt. Container + Oven Dry	Soil, ± 0.01a	N/A	·		1	<u>~~1</u>	<u> </u>
	Wt. Container, ± 0.01g		N/A				Α.	
w _o	Wt. Oven Dry Soil, g		40					
Pycnometer No.			2554					
	Wt. Pycnometer, g		/35	.70	······································	·		·
w,	Wt. Pycnometer + Wetting	g Agent, g	387	.09				·
W _b	Wt. Pycnometer + Wetting	g Agent + Soil, g	4/2	<u>53</u>		·		·
	Temperature, T _x at W _b , ℃		25.	ر ت ع	_			
G _w	Specific Gravity of Wetting	Agent at T _x		00				
G _t	Specific Gravity of Soil at T	×	<u>2</u>	. <u>7 5</u>				
G _s Specific Gravity of Soil at 20℃			<u> 2</u>	. <u>74</u>			1	
G _t =	$\frac{G_{\mathbf{w}^*}Y_{\mathbf{w}^*}W_{\mathbf{o}}}{W_{\mathbf{o}} + (W_{\mathbf{a}} - W_{\mathbf{b}})}$							
$\gamma_w = \text{Unit Weight Of Water (g/cc)}$ * $G_s = K_sG_t$			Average Specific Gravity At 20°c				2.74	
_	es found in ASTM D854-58, T	able 1			·····			
	G _s = G _t When Test Run at 2							

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HBenny Date 3-7-90

Westinhouse Hanford Company	CHAIN OF CUSTODY			
Company Contact JW Lind	bergTelepho	one 6-5005		
Sample Collected by DC Weekes	Date 1/11/90 - 1/20	2/90_ Time		
Sample Locations $MW-17$				
Ice Chest No. NA	Field Logbook and Pag	ge No. WHC-N-306-2, p. 27-35		
Remarks CERCLA, 1100-EM-	1 Operable Unit, Gro	indugter Monitoring		
Wells				
Bill of Lading No. NA	Offsite Property No.	NA		
Method of Shipment Hand Carry				
Shipped to Verry Alexander, W	IHC 2101-M Physical Te	sting Laboratory		
	Sample Identification			
MW-17-1 double-lined plastic	- tag			
MW-17-2 " " "	"			
MW-17-3 " " "	"			
MW-17-4 " " "	"			
MW-17-5 " " "	11			
MW-17-6 " " "	п .			
MW-17-7 " " "				
MW-17-8 " " "				
MW-17-9 ""				
MW-17-10 " " "	*/			
MW-17-11 " " "				
MW-17-12 triple-lined plas	tic bag			
	Chain of Possession			
Relinquised by: All Wee God Re	eceived by: RG. Alexander	Date/Time:		
DC Weekes	RG Alejand			
	eceived by:	2-2-90/10:20 Date/Time:		
	•			
Relinquised by:	eceived by:	Date/Time:		
Relinquised by:	eceived by:	Date/Time:		

SAMPLING ANALYSIS REQUEST

	ld Section			
Collector	DC Weekes	Date Sampled	Vrapo-Vrapo Time 1	A hours
Affiliation (of Sampler $\underline{\mathcal{W}}$	HC		
Address	450 Hills S	St. Richlan	STATE	9935
		Company Contact \(\sigma\)		•
LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION	 ₩₩
	MW-H-5			
	mw17-6		· · · · · · · · · · · · · · · · · · ·	
<u> </u>	MW-17-1		<u>.</u>	
	<u> MWH8</u>			
Analysis Requ	ested <u>MW-17-</u>	-5 through mu	3-17-7 Particles	ize Analy
	e Content, N	147-17-8 Particle	Size Analysis	
and Moistar				
and Moistan	,	• • • •	•	
<u> </u>		. '''.	•	
<u> </u>		ge	•	
		je	•	
Special Handl			•	
Special Handl	ing and/or Storag			

Figure 9-19. Example of hazardous waste sample analysis sheet.

NIME - 70

Revision 0 Date September 1986

/ RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-90	4
Coul	DATE OF 190
RELEASED BY RADIATION MONITORING DEMARKS DEMARKS OUTSED	RELEASED BY RADIATION MONITORING
The state of the s	REMARKS: 4D & 8 04 000 OUTSIDE OF
OF BAG. MU-17-1	BAG. MU-17-3
54-3000-022 (5-57)	54-3000-022 (5 - 57)
RADIATION RELEASE	RADIATION RELEASE
100 LIEU SIZE #17 Date 101-11-90	Hay. WELL SITE#17 Date 01-11-890
Released By	Released By Day
Remarks Operational Health Physics	Operational Health Physics
OF THE	Remarks DB S - ON OUTSIDE OF BAG.
54-3000-022 (09/88)	MW-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	MW-17-6
	RADIATION RELEASE
Date 0/-/2-90	100 WELL# 13 Date 0/-12-90
Released By Operational Health Physics	Released By Operational Health Physics
Remarks Of Supplication	Remarks < DB & ou sut-
54-3000-022 (09/88)	54-3000-022 (09/88)
[M	
RADIATION RELEASE 37-38	Dave RADIATION RELEASE
The Cels # 17 Date 01-12-90	MW-17/3000 agrapate 1/19/96
Neleased By Bold	cleased By Operational Health Physics
Remarks DE Operational Health Physics	Remarks LD Bd J
OF BAS.	MA - 1 - 20 - 20 - 20 - 20 - 20 - 20 - 20
54-3000-022 (09/88)	54-30 522 (09/88)
	•

TEST REQUEST FORM

Sample/Specimen No. O	060	Cost Code/Work Order No. ED 332
Requested By: Org. 80	<u> </u>	Person J. LINDBerg Date 2-12-90
	No. of amples	Test Lab Information (Instruction Used) ETAL-07
HYDROMETER	L W/A	ETAL- 07 (IF REQ)
N/A	N/A	N/A
Remarks FIELD SAMPO	<u> </u>	Received By: R.G. Alexanose Date 2-2-90 Approved By: R.G. Alexanose Date 2-12-90

			SIEVE ANAI	YSIS DAT	A SHEET					
		e ID_0-			Page/					
	Tested By R.G. AIEXANDER Date 2-18-90									
	Procedure ETAL-07 Rev 1 Date Issued 11-15-39									
	EQUIPMENT ITEM CALIBRATION NO. DATE DUE Balance 3804 3-25-25									
	Thermometer 0007 8-16-90 N/A N/A									
Sam	ple Desc	ription	SANDY GR	AVEL	Sieve Tir	ne <u>/0</u> (r	nin)			
			splitting	quartering						
BE	(B) FORE TI	est wt.	A AFTER TE	ST WT. N/A	$\frac{B-A}{B}X \ 100 = \Delta$	¼ % Loss				
Sieve II Number		Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative %	Cumulative %	% Pass			
N/A	2"	4534.66	245.54	5.9	5.9	94.1	94.1			
	11/2		443.88	9.8	9.8	90.2	90.2			
	- [794.43	17.5	17.5	8 Z · 5	82.5			
	3/4		925.10	20.4	20.4	79.6	79.4			
	1/2		1009.80	22.3	22.3	77.7	77.7			
	3/8		1054.59	23.3	23.3	76.7	76.7			
	#4	~*	1135.29	25.0	25.0	75.0	75.0			
	#10	4534.66	1245.51	27.5	27.5	72.5	72.5			
	#40	107.89	59.05	54.7	54.7	45.3	32.8			
	# 60		90.43	75.0	75.0	25.0	18.1			
	#100		89.77	83.2	83.2	16.8	12.2			
Y	# 260		95.75	88.7	88.7	11.3	8.2			
	Finess l	Modules (FM) N/A (See ASTM C 1	36-83, Section	B.2)				
MATER	IALS FI	NER THAN	NO. 200 SIE	VE BY WASH		···				
			sing a 200 Siev		Remark	es A Rive Gra	N. 15 (-			
	_	eight of San	-	107.89 g		LFIED	D/NG			
E=Dry W		Sample Afte :(D-E)/D> X	r Washing/Sieve - 100	13.73m	<u> </u>	MPUE				
			URATELY AND	יייא זכוארט ו	IV BECORDET). THE TES	·т			
0	PERATO	R WAS TR	AINED AND U		ATED INSTRU	MENTS	' -			
Checked By HL Benny Date 02-12-90										

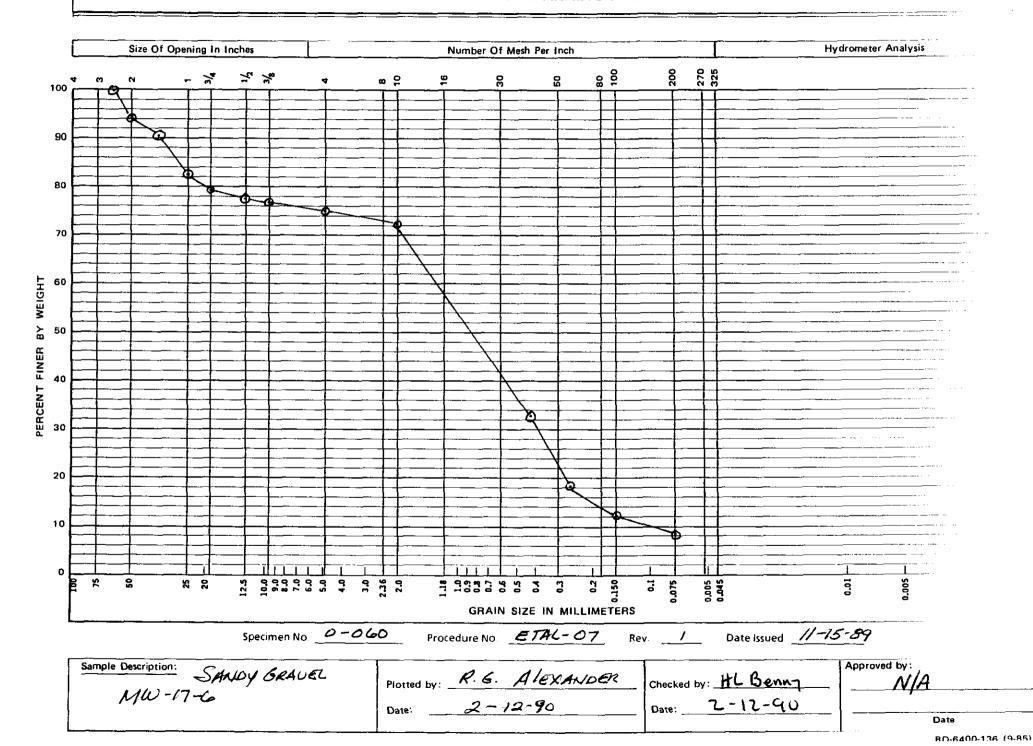
A-6400-204(2-87)

In

0

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. 9

THERMOMETER NO. CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-060	5262.87	5124.05	589.39	4673.48	4534,66	3.06
		_			/	
				<u></u>		
						
			\times			
						
		<u> </u>				
<u> </u>						···
/			~ -	<u> </u>		

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G. ALEXANDER

DATE 2-12-90

Westinhouse Hanford Company	CHAIN C	CHAIN OF CUSTODY			
Company Contact JW Line	dberg Telephi	one 6-5005			
Sample Collected by DC Weeke	S Date 1/11/90 - 1/2	0/90 Time <u>NA</u>			
Sample Locations MW-17		·			
Ice Chest No. NA	Field Logbook and Pa	ge No. WHC-N-306-Z, p.27-35			
Remarks CERCLA, 1100-EM					
wells					
Bill of Lading No	Offsite Property No.	NA			
Method of Shipment Hand Carry	1				
Shipped to Verry Alexander	WHC 2101-M Physical Te	esting Laboratory			
	Sample Identification	\bigcirc			
MW-17-1 double-lined plass	tic boo				
MW-17-2 " "					
MW-17-3 " " "	"				
MW-17-4 " " "	,,				
MW-17-5 " " "	11				
MW-17-6 " " "	"				
MW-17-7 " " "	"				
MW-17-8 " " "	<i>"</i>				
MW-17-9 ""					
MW-17-11 ""	/ · · · · · ·				
MW-17-12 triple-lined pla	ostic bag				
·					
	Chain of Possession				
Relinquised by:		Date/Time:			
DC Weekes	Received by: RG. AIEXANDER R.G. Alexand				
 	Received by:	2-2-90/10:20 Date/Time:			
Remiduised by.	Necested by.	Date/Time.			
Relinquised by:	Received by:	Date/Time:			
Relinquised by:	Received by:	Date/Time:			

SAMPLING ANALYSIS REQUEST

art I: Field Section
ollector DC Weekes Date Sampled Who-Visho Time NA hours
ffiliation of Sampler WHC
idress 450 Hills St. Richland WA 99352 number street city state zip
elephone (50%) 376 - 500 5 Company Contact V.W. Lindberg
ABORATORY AMPLE COLLECTOR'S TYPE OF JIMBER SAMPLE NO. SAMPLE* FIELD INFORMATION** MW7-6 11
MWH7 11
ialysis Requested MW-17-5 through MW-17-7 Particle Size Analysis and Moisture Content, MW-17-8 Particle Size Analysis
ecial Handling and/or Storage
RT II: LABORATORY SECTION**
ceived by Title Date
alysis Required
Indicate whether sample is soil, sludge, etc.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

^{**}Use back of page for additional information relative to sample location.

RADIATION RELEASE	RADIATION RELEASE
RELEASED BY RADIATION MONITORING	RELEASED BY RADIATION MONITORING
OF BAG. 84-3000-022 (5-57) MW-17-1	REMARKS: 4D & SOUTS (DE 8) SHE
MWRADIATION RELEASE WHO WELL SITE FIT Date 101-11-90	RADIATION RELEASE
Released By Operational Health Physics	Released By Operational Health Physics
Remarks 25 4 20 000-022 (09/88)	Remarks DE 8 ~ ON OUTSIDE OF BAG. MU-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
Released By Date 0/-/2-90	Released By Salah Date 0/-/2-90
Remarks Operational Health Physics Remarks	Operational Health Physics Remarks D S Subut-
54-3000-022 (09/88)	54-3000-022 (09/88)
MW-17-7 RADIATION RELEASE 37-38	Dank RADIATION RELEASE
Neleased By BoyD	leased By LOLD 200 Agendate 1/19/96
Remarks SDB Some Operational Health Physics OF BACOUTSIDE	Operational Health Physics / Remarks
OF DAS. 54-3000-022 (09/88)	54-39 22 (09/88)

TEST REQUEST FORM

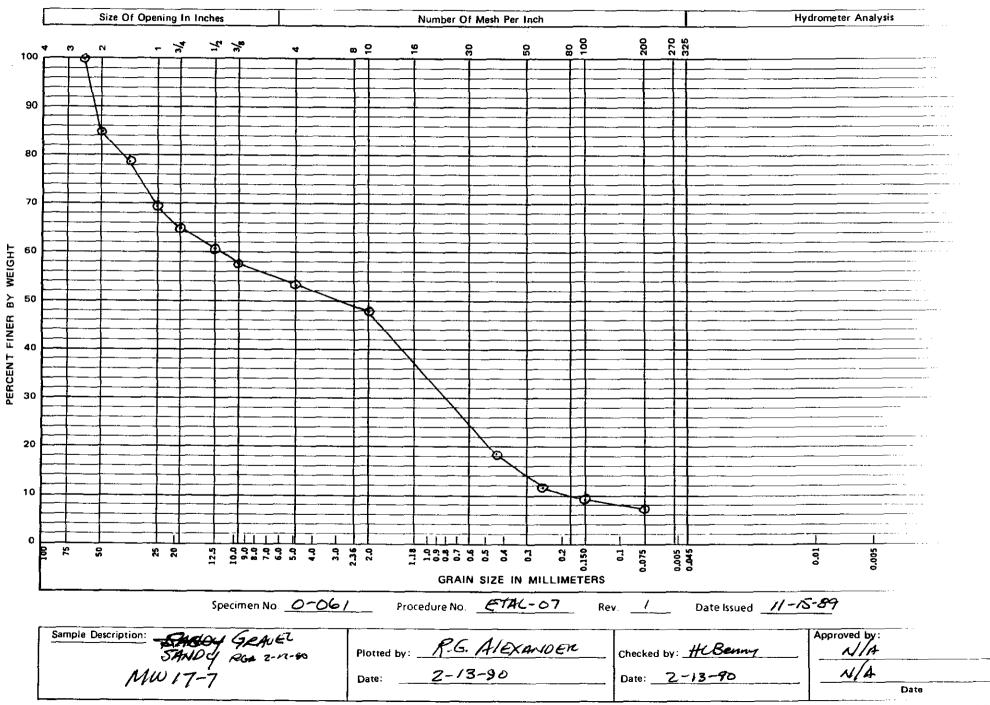
Sample/Specimen No	0-001	Cost Code/Work Order No. ED 332
Requested By: Org	. <u></u> 80232	Person J. LINDBERG Date 2-12-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS		ETAL-07
HYDROMETER		ETAL-07 (IF REQ)
N/A	<u> </u>	NA
N/A	NIA	N/A
	•	
Remarks Fiew SAM	.pue	Received By: R.G. ALEXAUDER Date 2-2-50 Approved Rv: R.G. ALEXAUDER Date 2-12-95

							~~~~~~~~~	·
				SIEVE ANAI	LYSIS DAT			
				061.		Page	of _	
Tested By R.G. ALEXAMORE Date 2-12-90								
 	1	Proced	lure <u>, E</u>	ETAL-07 Re	v <u> </u>	Date Issued <u>l</u>	1-15-89	
		Bale	ance rmome		LIBRATION N 3304 0007	10. DATE D 3-25 8-16	-90 -90	
			N/A		~, ~			
San	nple De	script	ion	SANDY GRA	,vel	— Sieve Tir	ne 10 (n	nin)
			<u> </u>	aplitting \		: □ stockp	ile	
13	EFORE	B) TEST	WT. D	AFTER TE	(A) ST WT. 14/14	$\frac{B-A}{B}X \ 100 = \frac{A}{B}$	JA % LOSS	
Sieve Numb		-	mple ight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative %	% Pass
NA	_ 2	44	38.93	678.03	15.3	15.3	84.7	84.7
	11/2	<u>. </u>	}	943.64	21.3	21.3	78.7	78.7
				1360.82	30.7	30.7	69.3	69.3
	3/4	4		1559,12	35.1	35.1	64.9	64.9
	1/2			1757.57	39.6	39.6	60.4	60.4
	3/8	3		1879.37	42.3	42.3	57.7	57.7
	*4		7	2013.12	46.7	46.7	53.3	53.3
	#10	् ५५	38.43	2312.77	52.1	52.1	47.9	47.9
	#41	0 13	7.84	84.48	61.3	613	38.7	18.5
	#60	>		104.64	75.5	75.5	24.5	11.7
	#10			111.90	81.2	81.2	18.8	9.0
7	* 2c			117.8Z	85.5	85.5	14.5	6.9
		s Modu	les (FM	() N/A		36-83, Section	B.2)	
MATE	ERIALS	FINER	THAN	NO. 200 SIE	VE BY WASE	IING		
C=Perc	entage o	of Mate	rial Pas	ssing a 200 Siev		Remark	EINE	·
D=Orig	inal Dry	Weight	of San	nple	137.84 E	GRAG		·
E=Dry				r Washing/Sieve	117.82g		FIELD SAMP	Œ
	C =	: <(D-E)/p> x	100			<u> </u>	
		ror wa	AS TR	URATELY ANI AINED AND U		ATED INSTRU		Т
L						٨.	-6400-204(2-87)	

C.

6

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO.

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WY. SOIL	DRY WT. SOIL	% WATER
0-061	5350.46	5027.41	58848	4761.97	44 38,93	7-28
			ļ			Ĺ
			<u> </u>			<u> </u>
· · · · · · · · · · · · · · · · · · ·					/	
		\				
		$\overline{}$				
						
			\times			
						

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

RG ALEXANDER

DATE 2-12-90

Westinhouse Hanford Company	CHAIN O	CHAIN OF CUSTODY			
Company Contact JW Line	berg Telepho	one 6-5005			
Sample Collected by <u>DC Weeke</u>		<u> </u>			
Sample Locations MW-17					
Ice Chest No. NA	Field Logbook and Pag	ge No. WHC-N-306-2, p. 27-35			
Remarks CERCLA, 1100-EM					
wells					
Bill of Lading No. NA	Offsite Property No.	NA			
Method of Shipment Hand Carry	<u> </u>				
Shipped to Verry Alexander	WHC 2101-M Physia Te	sting Laboratory			
	Sample Identification				
MW-17-1 double-lined plast	tic bag				
MW-17-2 " "	"				
MW-17-3 " " "	"				
MW-17-4 " " "	′′				
MW-17-5 " " "	11				
MW-17-6 " " "	"				
MW-17-7 " " "	,,				
MW-17-8 " " "					
MW-17-9 ""					
MW-17-10 " " "	1 17				
MW-17-11 " "	·				
MW-17-12 triple-lined pla	istic bag				
·					
_	Chain of Possession				
Relinquised by:		Date/Time:			
DC Weekes	Received by: RG Alexanoen RG Alexand				
	Received by:	2-2-90 / 10:20 Date/Time:			
nemiquised by:	neceived by.	butter rime.			
Relinquised by:	Received by:	Date/Time:			
Relinquised by:	Received by:	Date/Time:			

SAMPLING ANALYSIS REQUEST

4444444444444	of Sampler <u>W</u>		and	(1/4	9925
Mdd1.622	sumper street	if. Richle	.,, <u>c</u>	state	z1p
Telephone <u>(S</u>	9 376 -5005	Company Contact	J.W. C1	indberg	
LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD :	INFORMATION	* *
	MW-H-5	50:1			
	mw17-6				
	MW.17-7	LI			
	MWH8	u			
		5 through n 4)-12-8 Partic			/ //// /
nectal Mandle	ing and/or Storag	re			
heetat transi					
	DRATORY SECTION**				
ART II: LABO	DRATORY SECTION**			Date	
				Date	

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date September 1986

and the second s	
RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-20	
· Paral	DATE 01-11-90
RELEASED BY RADIATION MONITORING	RELEASED BY
REMARKS: < D A S CONT OUTSIDE	RADIATION MONITORING
NEMANIA.	REMARKS: LD F & CHISIDE OF
OF BAG. NAIST-1	BAG.
54-3000-022 (5-57)	, 54–3000–022 (5 – 57)
10617-3	
RADIATION RELEASE	RADIATION RELEASE
1 1 154 317 F #13 Date 01-11-90	10 Date 01-11-590
Released By Sago	Land.
Operational Health Physics	Released By Operational Health Physics
Remarks DE & J W SIDE	Remarks DB 800 OUT SIDE OF
54-3000-022 (09/88)	BAG.
34-3000-022 (05/08)	MW-17-4 54-3000-022 (09/88)
- MIN-17-5	4441-19-1
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
1.11#11 - 00	4
Date 0/-/J-10	Hag. WELL# 13 Date 0/-12-90
Released By Operational Health Physics	Released 8y Operational Health Physics
Remarks Sy Sy Sy Syllolde	Remarks 108 / mout-
of beg.	side of bag.
54-3000-022 (09/88)	54-3000-022 (09/88)
M14 13	•
RADIATION RELEASE 37-38	DAYE RADIATION RELEASE
The state of the s	5 MW-17/3000 ansonDate 1/19/96
Date 01-12-90	leased By (00) Republic 1/19/96
Released By Operational Health Physics	Operational Health Physics
Remarks SDF & ON OUTSIDE	Remarks LD P-d -1 4
OF BAS.	
54-3000-022 (09/88)	7 54-30 to 22 (09/88)

TEST REQUEST FORM

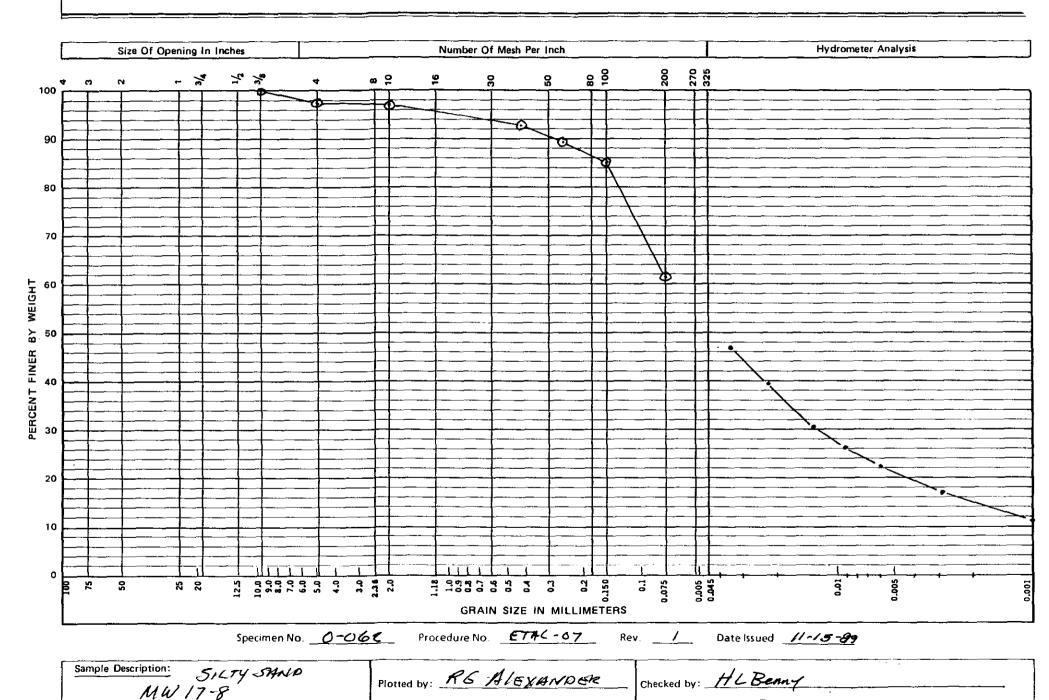
Sample/Specimen No.	0-062	Cost Code/Work Order No. ED 33Z
Requested By: Org.	80232	Person J. LINDBERG Date Z-13-90
Test Requested SIEVE ANALYSIS HYDROMETBR MOISTURE	No. of Samples (Test Lab Information (Instruction Used) ETAL-07 ETAL-07 (IF REQ) ETAL-14
N/A	N/K	N/*
Remarks FIELD SAM MW-17-8	ФŒ	Received By: R.G. Alexander Date Z-2-90 Approved By: R.G. ALEVANDER Date Z-13-9

				NALYSIS D.					
			-06Z			ge <u> </u>			
	Tes	sted By	R.G Alex	ander	Date_	2-13-9	10		
	Pro	oceđure	ETAL-07	Rev_l	Date	Issued <u></u>	de. 21-)		
	EQUIPMENT ITEM CALIBRATION NO. DATE DUE Balance 3304 3-25-90 Thermometer 0007 8-16-90								
		Thermor	neter /			8-16-	-90		
	[<u></u>								
Sam	ple Desc	ription	SILTY SA	.ND	····	Sieve Ti	me(1	nin)	
				quarter					
BE	(B) FORE TE	EST WT.	u/A after	(A) TEST WT. A	/ <u>h</u> B-A	X 100 = 5	୬/ ୯ % ୮୦ SS		
Sieve II Number		Sample Weight		e Wt. % Retaine	1	nulative % etained	Cumulative ?	% Pass	
N/A		!				1			
[
						<u> </u>		 	
-		4	1			1			
	3/8	160.18	3 Ø	Ø		9	100	100	
	¥ 4	1	3.62	2.3		2.3	91.7	97.7	
	*10		4.84	3.0		3.0	97.0	97.0	
	#40		11.64	7.3		7.3	92.7	92.7	
	#60		17.05	10.6		10.6	89.4	89.4	
	# 100		24.(7	15.1		15.1	84.9	84.9	
4	# 260	4	61.92			38.7	61.3	61.3	
	Finess l	lodules (FM) N/A	(See ASTM	C 136-83	, Section	·]	4	
MATER	IALS FIN	VER THA	N NO. 200	SIEVE BY WA	SHING				
			- -	Sleve <u>61.3</u> %		Remar:	ks FINE GRA	D.12(
	al Dry We	_		160.18 m	:	W PAOP	FINE OFCH	3136	
E=Dry W		Sample Af (D-E)/D>	ter Washing/S	Sieve <u>61.92</u> g		**			
			····	11Th 201		DOC DOC		<u> </u>	
	PERATO	R WAS T	RAINED AN	AND COMPLE D USED CALI				ST	
_ C	hecked	By H	Benny				2/13/90	-	
·							_8400-204(2-87)		

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9

GRAIN SIZE ANALYSIS PLOT



Date: 2-13-90

Date: 2-13-90

			HYDROMETER ANA	ALYSIS DATA SHEET			·
Sample IC	0.	-062		Page	of/		
		Tested By H	Benny	Date 2-25	5-90		
		Procedure <u>FT/</u>	46-07 Rev [Dat	e Issued			
		EQUIPA	1ENT ITEM		BRATION EDATE		
		Hydrometer		4L-1000 2-		İ	
		Balance		46-3304 3-		1	
		Thermomete	r/Thermocouple ETA	1L-000Z Z-			
		of Sample $\underline{2}$	•	HYGROSCOPIC	MOISTURE C	ONTENT	
% Passir	ng No. 10	Sieve	97.0 (%)	Wt. Container + Air Dr			r)
Hygrosc	opic Corr	ection Factor	<u> </u>	Wt. Container + Oven			.
		VEIGHT OF SAM	DI F	Wt. Container			•
Wt Con	 + tainer		$\mathcal{N}A$ (g)	Water Content			
Wt. Con			<i>N</i> Α (g)			_ \ `	, u ,
Wt. Soil			5/,99 (g)	RE	MARKS		
171. 50.				Tube D			 -
		APOSITE CORRE					
		_ <i>6</i> at		w = 53.60			
2nd Rea	ading	NA at	<i>NA</i> °c				
							
							<u></u>
Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
2-25-90	0852	2.0	31	25	23.6	47.1.	0.032
	0855	5.0	27	21	23.6	39.6-	0.021
	0905	15.0	22	HLB 26/16	23.1	30.2.	0.012
	0920	30.0	20	14	22.9	26.4.	0.00

Date	time	time (min)	reading	Hydrometer with composite correction	Temp. (°C)	suspension (%)	diameter (mm)
2-25-90	0852	2.0	3/	25	23.6	47.1.	0.032
	0855	5.0	27	21	23.6	39.6-	0.021
	0905	15.0	22	HLB 26/16	23.1	30.2.	0.012.
	0920	30.0	20	14	22.9	26.4.	0.009
	0950	60.0	18	12	22.4	22.6.	0.006
	1300	250.00	15	9	21.9	17.0.	0.003
2-26-90	0850	1,440.0	12	6	21.4	11.3	0.001

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY	
TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WE	RE
FOLLOWED TO PRODUCE THE ABOVE DATA.	

Checked By R.G Alexand

Date 3-6-90

SPECIFIC GRAVITY OF SOILS DATA SHEET

Test	Operator R.G. ALEXA	NOER		2-28-9	0	
•	COLUMNATALY ITEM	_N;	•	DΔ	TE DUE	i.
	EQUIPMENT ITEM					
	ance en Thermometer	3304		3-25 8-16		-
	rmometer	0002		2-9-	·	<u> </u>
	nometer	2554		NI		
Wetti	ng Agent "O" WATER					
	DETERMINATION NO.		1	;	2	3
	Drying Container No.		N/A	N/A		N/A
	Wt. Container + Oven Dry Soil, ±	0.01g	N/A		·	·.
	Wt. Container, ± 0.01g		N/A :		·	<u> </u>
w,	Wt. Oven Dry Soil, g		40.00		•	
	Pycnometer No.		2554			
	Wt. Pycnometer, g		135.72		·	
W _a	Wt. Pycnometer + Wetting Agen	t, g	387 · <u>0</u> 1			•,
W _b	Wt. Pycnometer + Wetting Agen	t + Soil, g	411.70		·	
	Temperature, T _x at W _b , °C		25,2 C	,		
G _w	Specific Gravity of Wetting Agen	at T _x	1.00			
G,	Specific Gravity of Soil at T _x		2.40			
G,	Specific Gravity of Soil at 20°C		2.59			1
	$= \frac{G_{w*}Y_{w*}W_{o}}{W_{o} + (W_{a} - W_{b})}$ Unit Weight Of Water (g/cc)					
γ _w = bill weight of water (gree) *G _s = K·G _t		Average Spe	Average Specific Gravity At 20°c			
-	res found in ASTM D854-58, Table 1					
NOT	\mathbf{E} $\mathbf{G}_{s} = \mathbf{G}_{t}$ When Test Run at 20 °c					

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAC-14 REV. NO. B

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

79 30.25
1 /
1

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

R.G ALEXANDER TEST OPERATOR:

DATE 2-13-90

Westinhouse Hanford Company	CHAIN	OF CUSTODY
Company Contact JW Lind	berg Teleph	none 6-5005
Sample Collected by DC Weekes	Date 1/11/90 - 1/2	20/90 Time NA
Sample Locations MW-17	, , ,	
1//	Field Logbook and Pa	age No. WHC-N-306-2, p. 27-35
Remarks CERCLA, 1100-EM-	-1 operable Unit, Gra	oundwater Monitoring
Wells		
Bill of Lading No.	Offsite Property No.	NA
Method of Shipment Hand carry		
Shipped to Verry Alexander, W	IHC 2101-M Physia 17	Testing Laboratory
J	Sample Identification	
MW-17-1 double-lined plastic	Sample identification	
MW-17-2 11 "1"	"	
MW-17-3 " " "	//	
MW-17-4 " " "	,,	
MW-17-5 " " "	11	
MW-17-6 " " "	11	
MW-17-7 " " "	11	
MW-17-8 " " "	′′	
MW-17-9 "	, ,	
MW-17-10 " " "	1/	
MW-17-11 """""	•	
MW-17-12 triple-lined plas	tic bag	
	Chair of Devenier	
Relinquised by:	Chain of Possession	Detection of
1811 4100	eceived by: RG AIEXANDER	Date/Time:
	RG Alefand	Z-Z-90/10:20 Date/Time:
Reiniquised by:	cerea by.	Juste Time.
Relinquised by:	eceived by:	Date/Time:
Relinquised by:	eceived by:	Date/Time:

SAMPLING ANALYSIS REQUEST

Part I: Fie	ld Section				
Collector	DC Weekes	S Date Sampl	ed 1/4/20-1/19/	% Time 1	A hours
	of Sampler $_$ ω		,		
Address	HSO Hills S	St. Richle	and	WA	99352
		Company Contact			•
LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	SAMPLE*	FIELD	INFORMATION	**
	<u>mw+7-5</u> <u>mw+7-6</u> mw+7-7				
Amalunia Dagu	mwH8			0 + 7 c	· 1
		-5 through n 147-12-8 Partic			13e Hays
			•		
Special Handl	ing and/or Storag	je			
		-			ji
PART II: LAB	ORATORY SECTION*	•			
Received by _		Title		Date	
Analysis Requ	ired				
* Indicate who **Use back of	ether sample is s page for additio	soil, sludge, etc. onal information r	elative to s	ample locat	ion.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date <u>September 1986</u>

RADIATION RELEASE MELL SITE #17 DATE 01-11-90	RADIATION RELEASE
RELEASED BY BOTH RADIATION MONITORING REMARKS: \(\D \) \	RELEASED BY RADIATION MONITORING REMARKS: DE STATE OF OUTSIDE ST
OF BAG. 84-3000-022(5-57) MW-17-1	REMARKS: 54-3000-022 (5-57)
MWRADIATION RELEASE MARGINETICS Date 01-11-90	RADIATION RELEASE
Released By Operational Health Physics Remarks D D D D D D D D D D D D D D D D D D D	Released By Operational Health Physics Remarks OF ON OUTSIDE OF
54-3000-022 (09/88)	Bas. MW-17-4 54-3000-022 (09/88)
RADIATION RELEASE Date 01-12-90	RADIATION RELEASE
Released By Operational Health Physics Remarks Authorite	Released By Operational Health Physics Remarks — D S S M Suff-
54-3000-022 (09/88)	54-3000-022 (09/88)
MW-17-7 RADIATION RELEASE 37-38	DRIVE RADIATION RELEASE 5 MW-17/3000 December 1/19/96
Remarks SD & SU OUTS/DE	Aleased By Operational Health Physics Remarks LD P L L
OF BAS. 54-3000-022 (09/88)	54-30 ts 22 (09/88)

TEST REQUEST FORM

Sample/Specimen No.	0-063	Cost Code/Work Order No. ED 332
Requested By: Org.	80232	Person J. LINDBERG Date Z-13-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
Hypravice Conductivity		ETAL-09
ATTERBERG TIMITS		E7AC-18
N/A	N/A	NIA
AJU	NJA	NIA
	•	
Remarks FIELD SAN	Vbre	Received By: R.G. A. (EXAMPLE Date 2-2-90
		Approved By: R. & Alexanosa Date 2-13-9

HYDRAULIC CONDUCTIVITY OF SOILS DATA SHEET 0-063 Page ____ Of ___5 Sample No. R.G. ALEXANDER Date Z-13-90 NO. EQUIPMENT ITEM DATE DUE 3304 3-25-50 Balance 0007 Oven Thermometer 8-16-90 ALM Thermometer Thermocouple Temperature Controller Pressure Gauge Pressure Transducer Pressure Transducer Back Pressure Gauge Pressure Transducer Pressure Transducer 5623 8-16-90 Calipers NA Load Frame N/A Data Logger NA Immediate (User) Calibration Performed. (Documentation To Be Attached) Sample Preparation PARTICLE SIZE WEIGHT (Sieve Mesh Range) N/A To N/A _____ То _____ __ To ____ __ To ___ ____ To ___ __ To _ ____ To ____ 100 % Total OTHER COMPONENTS % Total 100 % ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES

WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HLBenny

SAMPLE PREPARATION

Determine Weight of Samples in Container

Container No.	55
Wt. of Sample + Container, g	465.08
Wt. of Container, g	120.56
Wt. of Sample, g	344.52

Determine the Water Content of the "Air Dry" Sample

Container No.	55
Wt. Container & Wet Soil (A), g	465.08
Wt. Container & Dry Soil (B), g	373.36
Wt. of Water, g	91.72
Wt. of Container (C), g	120.56
Wt. of Dry Soil, Wa, g	252.80
Water Content (W), %	36.28

$$W = (\frac{A \cdot B}{B \cdot C}) 100$$

SAMPLE COMPONENT	SPECIFIC GRAVITY, G	LABORATORY NOTEBOOK DATA LOCATION
N/A	N/A	NIA
N/A	Nla	NIA
NLA	NIA	NA

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HL Benny

Date 2-22-90

SAMPLE COMPACTION

Compaction Method Static Tamping Tamping

					
STATIC Load Applied, g/ Layer length, cm	rer 1	N	A	11 🙏	A
or	2			12	
TAMPING No. Tamps per Layer/	3			13	
Layer Length, cm	4			14	
	5			15	
	6			16	
1/4	7	-		17	
Total No. of Layers	8			18	
LIVETE TUBE	9			19	
	10	Ŋ		20	1
Tamper Foot Diameter cm		NIA	\		· ,
Tamper Applied Load, g		NI]	
Sample Diameter, (d), cm		7.0.]	
Sample Length, (L), cm		10.4	10		
Sample Mold or Permeameter Weight & Compacted Sample	, 9	811.	24		
Sample Mold or Permeameter Weight, g		88.9	77]	
Weight of Compacted Sample, (E), g		722.	27	}	
Weight of Container & Uncompacted Wet Sample, (A), 'g		465	.08	ļ	
Weight of Container & Uncompacted Dry Sample, (B), g	373.	36	 		
Weight of Water, g		91.	7Z	1	
Weight of Container, (C), g		120-5	56		
Weight of Dry Soil, (WS), g		752.	80		
Water Content, %		36	. Z8		
Compacted Bulk Density of Sample, (γm) , g/cc		1.79	3	}	
Compacted Sample Dry Density, (γd), g/cc		1.3	1		

$$\gamma_{\text{m}} = \frac{E}{(\pi) (d/2) 2(L)}$$

$$\gamma_{\text{d}} = \left(\frac{\gamma_{\text{m}}}{w + 100}\right) 100$$

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By <u>HCBenny</u>

Date 2-22-90

HYDRAULIC CONDUCTIVITY DATA SHEET

Page 4 of 5

Procedure No. ETAL-09 Date Issued 12-1-89

DATE		TIME				VOLUM	E DETERMI				
Year 90 (Mo/Day)	System Down (Hr: Min)	System Up (Hr: Min)	Time Change (Hr: Min)	Effic Temp (°C)	uent Weight (±0.1g)	Cont Tare (±0.1g)	ainer Tare & Ef- fluent(±0.1g)	System Temp (°C)	Pres Pore H ₂ 0 (pei) CP1	sure Back H ₂ O (psi)	Operator Initials
Z-12		1000				64.34			196.0	NIA	RGA
2-13	1030	1035	24:30	22	20.42	66.36	84.78	27	196.0	N/A	RLA
2-14	2501	1040	24:00	21	20.25	66.36	86.61	21	196.0	N/A	RGA
2-15	1040	10 45	24:00	22	22.03	66.36	88.59	22	196.0	N/A	RCA
2-16	1048	STOP	24:00	22	20.75	66.36	87.11	22	196.0	N/A	Rot
STOP	7 5 \$T										RGA

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							<u> </u>		<u> </u>		

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HBenny

Date 2-22-90

HYDRAULIC CONDUCTIVITY DATA SHEET

Page <u>5</u> of <u>5</u> Date Issued 12-1-89

Procedure	No.	ETAL-09	

Date -	Hydraulic	Hydraulic	Effluent Analysis		F	
YearO (Mo/Day)	Conductivity (cm/sec)	Gradient (cm/cm)	(Sample Number)	Lab. Notebook Location	Effluent Description	Operator Initials
2.12	START	TEST				RGA
2-13	3.17 ×10-7	18,85			CLEAR	RLA
2-14	3.20 × 157	18.85		+	CLEAR	RCA
2-18	3.45 110-7	18.85			CIENR	RIA
2-14	3. 28 X10-7	18.62	-	_	CIEAR	RU
STUP TE	5r 3.3	+/- 0.2 x	10-7 CM/S	<u>ور</u>		Res
		<u> </u>				
·····		· · · · · · · · · · · · · · · · · · ·				
						<u> </u>

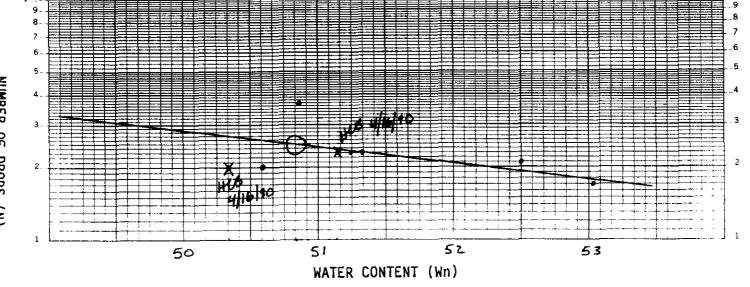
ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HBenny

____ Date <u>2-22-90</u>

PLASTIC INDEX SOILS DATA SHEET

Sample No. 0-063	Page _/_of_ Z_
Test Operator HLBenny	Date <u>4/9/90</u>
Thermometer No. 0007	Calibration Date <u>8/16/90</u>



Liquid Limit (LL) 5083 Graph

Plastic Limit (PL) 41.43 (Avg.) Liquid Limit (LL) <u>NA</u> One Point Moisture (PL) 43.29% 40.80% 40.21%

Plastic Index (PI)* 9.40 Moisture (LL) 50.83 %

*PI = LL - PL

Remarks

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED TAR A (1) 90 THE TEST OPERATOR WAS APPROPIATELY TRAINED AND ULITIZED CALIBRATED TEST INSTRUMENTS. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THIS DATA.

SOIL MOISTURE DATA SHEET

PROCEDURE NO. <u>ETAL -018</u> REV. NO. <u>\$\phi\$</u>
THERMOMETER NO. <u>0007</u> CALIBRATION DUE DATE <u>8/16/90</u>

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-063-1	25.58	23.87	19.92	5.66	3.95	43.29
- 2	21.34	ZO. 63	18.89	2.45	1.74	40.80
-3	22.64	21.51	18.70	3.94	2.81	40.21
				Average	% Water	41.43
				,		
0-063-4	31.18	27.16	19.34	11.84	7.82	51.41
- 5	32.67	28.28	19.71	12.96	8.57	51.23
-6	30.07	. 26.54	19.57	10.50	6.97	50.65
-7	35.62	30.17	19.79	15.83	10.38	52.50
- 8	33.40	28.62	19.22	14.18	9.40	50.85
-9	34.46	29.42	19.92	14.54	9.50	53.05
						-
						
						
		-			·	
		, <u>.</u> .				
		. 				
108 414	4.D		l			

JOB 414 140
JABL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: HL Berny

21 37 17

ţ	Westinhouse Hanford Company	CHAI	N OF CUSTODY
	Company Contact JW Lino	berg Tele	ephone 6-5005
	Sample Collected by DC Weekes		1/20/90 Time NA
	Sample Locations $MW-17$		
	Ice Chest No. NA	Field Logbook and	Page No. WHC-N-306-2, p. 27-35
İ	Remarks CERCLA, 1100-EM	-1 operable Unit, G	roundwater Monitoring
ļ	wells		
	Bill of Lading No	Offsite Property N	o. <i>NA</i>
	Method of Shipment Hand Carry		
	Shipped to Verry Alexander, L	VHC, 2101-M Physial	Testing Laboratory
	<i>\(\frac{1}{2}\)</i>	Sample Identification	
	MW-17-1 double-lined plasti	¿ ha	
]	MW-17-2 " " "		
]	MW-17-3 " " "	//	
ហ	MW-17-4 " " "	//	
~	MW-17-5 " " "	11	
رسم	MU-17-6 " " "	"	
	MW-17-7 " " "	11	
` '	MW-17-8 " " "	"	
dags	MUJ-17-9 "	• • •	
	MW-17-10 " " "	"	
.	MW-17-11 "" ""	'1	
্য	MW-17-12 triple-lined plas	stic bag	
_			
_,			
5			
7			
ļ			
İ			
-			
-		Chain of Possession	
Ì	Relinquised by: Malekes R	eceived by: RG. Alexander	Date/Time:
-	DC Weekes	RG Alefand	2-2-90/10:20
	Relinquised by:	eceived by:	Date/Time: /
-	Relinquised by:	eceived by:	Date/Time:
	Relinquised by:	eceived by:	Date/Time:

SAMPLING ANALYSIS REQUEST

Part I:	Field Section			
Collecto	- De Weekes	Date Sampl	ed 1/19/90-1/2/90 Ti	me MA hours
	ion of Sampler <u>WHC</u>			
Address	450 Hills St.	Richla	nd W	<u>4 99352</u>
	number street	city	sta	te zip
Telephon	e <u>(59) 376-5005</u> com	pany Contact	J.W. Linde	perg
LABORATO	RY			-
SAMPLE	COLLECTOR'S TY	PE OF		
NUMBER	SAMPLE NO. SA	MPLE*	FIELD INFO	RMATION**
	mw17.9	50 <u>il</u> _		
	MW/7.11	H	······	
	MW712	11		
Analysis Requested MWFA Permeability and atterberg Limits,				
mwff. 10 through mw-17-12 Particle Size Analysis				
,	U			•
Special Handling and/or Storage mw-17-9 does not have liner.				
Perme	ability must be done w	ith flexib	le wall permean	neter or must
be co	red.			
DADT TT.	LABORATORY SECTION**			•
PARI 11.	EADORATORT SECTION			
Received by		Title		Date
Analysis Required				
* Indicate whether sample is soil, sludge, etc.				

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date September 1986

^{**}Use back of page for additional information relative to sample location.

/ RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-20	DATE 01-11-90
RELEASED BY RADIATION MONITORING	Sand
REMARKS: \D & Y \ OW OUTSPDE	REMARKS: DE STORY OUTS/DE SE
OF BAG.	BAG.
54-3000-022 (5 - 57) MW	54-3000-022 (5 - 57)
MWRADIATION RELEASE	DADIATION DELFACE
THE WELL SITE #12 Date OF-11-90	RADIATION RELEASE
Released By Sand	Released By Sand
Remarks Operational Health Physics	Operational Health Physics Remarks D S ON OUTSIDE OF
54-3000-022 (09/88)	BAS.
54-3000-022 (03/00)	MW-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
MADIATION RELEASE RADIATION RELEASE Date 0/-/2-90	1.
Released By	Released By Sale Date O/-/2-90
Remarks Operational Health Physics	Remarks Descriptional Health Physics
54-3000-022 (09/88)	side of bag.
34-3000-022 (03/00)	54-3000-022 (09/88)
MW-17-7 RADIATION RELEASE 37-38	Dank RADIATION RELEASE
- Birth (1/4/17 Date 01-12-90	MW-17/3000 Dependate 1/19/96
N Released By BoyD	eleased By Operational Health Physics
Operational Health Physics Remarks SDE SUTSIDE	Remarks LD B-Q -1 4
OF BAS. 54-3000-022 (09/88)	54-30 (5) 22 (09/88)
MW-17-6	I I I D
RADIATION RELEASE	RADIATION RELEASE
Released By Salah Date 0(-20-90	MW-17 D Date 01-20-90
Operational Health Physics	Released By Operational Health Physics
Remarks SDA / OK our setting	Remarks DE / Con outside of
54-3000-022 (09/88)	54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No	.0064	Cost Code/Work Order No. ED 332
Requested By: Org	80232	Person J. LINDBERG Date 2-13-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEUE ADALYSIS	[ETAL-07
Hyprometer		ETAL-OT (IF RED)
	N/A	NIA
NA	NA	N/A
	•	
Remarks FIELD SA		Received By: REALEXANDER Date 2-2-80
MW-17-10		Approved By: R.G. Alexander Date 2-13-9

			SIEVE ANAI	YSIS DAT	A SHEET			
	Sampl	e ID <u>O</u> -0	064		Page/			
	Tes	ted By_	R.G. Alexa	NDER I	ate 2-/3-	90		
	Procedure ETAL-07 Rev Date Issued 11-15-89							
EQUIPMENT ITEM CALIBRATION NO. DATE DUE Balance 3304 3-25-90								
	-	Thermome	ter	0607 N/A	<u>8-14</u>	,-90		
	-			•				
ľ			SILTY SAND				nin)	
		by X	splitting [] quartering (A)	stock	plle		
BEF	(B) ORE TE	ST WT.N	AFTER TE	ST WT. N/A	$\frac{B-A}{B}X \ 100 = A$	V/A % LOSS		
Sieve ID Number	Sleve Slze		Cumulative Wt. Retained (g)	% Retained	Cumulative 7	Cumulative %	% Pass	
N/A	1		ı				1	
							1	
							 	
				 			 	
			 - 			 		
	4			4		+ + -	1	
	#4	129.01	ø	Ø	Ø	100	100	
	#10	1	0.74	0.6		99.4	99.4	
	#40		20.31	15.7	15.7	84.3	84.3	
	# 60		33.80	26-2	24.2	73.8	73.8	
	#100		42,66	33.1	33.1	66.9	66.9	
4	#200	— 	5z.97	41.1	41.1	58.9	58.9	
		fodules (FM			36-83, Section		20.7	
MATERIALS FINER THAN NO. 200 SIEVE BY WASHING								
C=Percentage of Material Passing a 200 Sieve 58.5 % Remarks								
D=Original	l Dry We	ight of San	nple	129.01	WASH	FINE GRADI	<u> 7</u>	
E=Dry Wel			r Washing/Sleve	52.97g				
<u> </u>	C = <((D-E)/D> X	100					
II			URATELY AND				T	
			AINED AND U	PED CYPTRK		2-13-90		
	Checked By #18-enry Date 2-13-90							

~

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE

Checked By R.G. Alexand Date 3-6-90

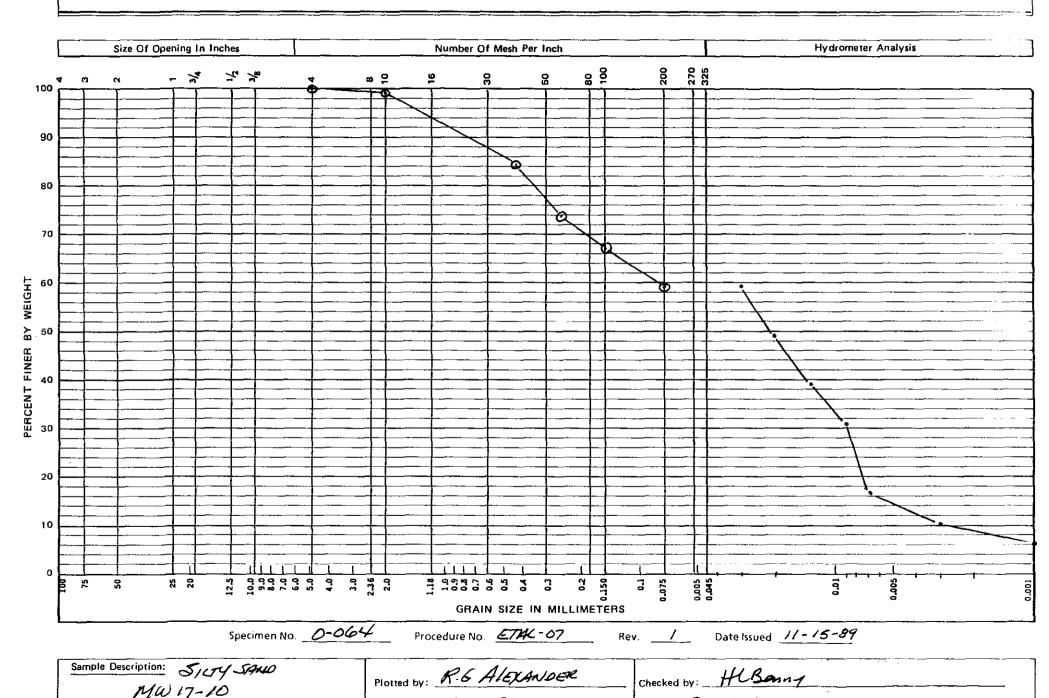
FOLLOWED TO PRODUCE THE ABOVE DATA.

A-6400-205 (1,87)

SPECIFIC GRAVITY OF SOILS DATA SHEET

	Spe	cimen/Sample No.	0-064		Pag	e <u>1</u>	of1			
	Test	Operator RG	ALEXAL	DER			2-28-	90		
	EQUIPMENT ITEM NO			D. DATE DUE						
	ı Bala	ance		3304			3-25-	90	ļ	
	Ove	en Thermometer		0007			8-16-	9 0		
i	The	rmometer		0002			2-5-	9 (
	Pyci	nometer		2554			~/p	·		
	Wetti	ng Agent 'O'	WATER							
		DETERM	INATION NO.		1			2		3
	 	Drying Container N	о.		N/A		N/	'A	N	/ <u>A</u>
		Wt. Container + O	ven Dry Soil, ± 0.0	11g	N/A	<u></u>			1	
		Wt. Container, ± 0.	.01g		N/A				۸.	
¥	W _o	Wt. Oven Dry Soil,	g		40	.00	l			•
	-	Pycnometer No.		1	7.55	4	i			
		Wt. Pycnometer, g			135	.72		·		
	W _a	Wt. Pycnometer +	Wetting Agent, g		387	·0.1		·		·
	W _b	Wt. Pycnometer +	Wetting Agent +	Soil, g	411	.07		·		·
		Temperature, T _x at	w _b , °C		24	0c.				
	G _w	Specific Gravity of	Wetting Agent at 1	Γ _x	1	.00				
	G _t	Specific Gravity of	Soil at T _x		2	.50		·		
	G,	Specific Gravity of	Soil at 20°C		2	.49	•		*	
		$\frac{G_{w^*} \gamma_{w^*} W_o}{W_o + (W_a - W_b)}$	LTY SAND							
	$\gamma_w = Unit Weight Of Water (g/cc)$ * $G_s = K_*G_t$			Average Specific Gravity At 20°c				2.49		
K values found in ASTM D854-58, Table 1									!	
	*NOTE	E G _s = G _t When Test I	Run at 20 °c							
	TRAINE	QUIRED DATA ARE A ED AND UTILIZED CA FOLLOWED TO PROD	LIBRATED TEST IN	ISTRUMENTS AS I						:
	Charke	ed By HLB	enny			Dat	3-	1-90		

GRAIN SIZE ANALYSIS PLOT



Date: 2-/3-98

Date: 2-13-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. OOO7 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	Z WATER
0-064	3946.60	3012.32	589.39	3356.61	2422.93	38.54
						ļ
						·.
		ĺ	Ì			

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G ALEXANDER

DATE 2-13-90

Westinhouse Hanford Company	CHAIN	CHAIN OF CUSTODY			
Company Contact JW Linc	berg Teleph	none 6-5005			
Sample Collected by DC Weeke		20/90 Time NA			
Sample Locations $MW-17$					
Ice Chest No. NA	Field Logbook and Pa	age No. WHC-N-306-2, p. 27-35			
Remarks CERCLA, 1100-EM	-1 Operable Unit, Gra	oundwater Monitoring			
wells		\smile			
Bill of Lading No.	Offsite Property No.	NA			
Method of Shipment Hand Carry	/				
Shipped to Verry Alexander,	WHC 2101-M Physical 7	esting Laboratory			
	Sample Identification				
MW-17-1 double-lined plast	ic bag :				
MW-17-2 " "	9,				
MW-17-3 " " "	"				
MW-17-4 " " "	"				
MW-17-5 " " "	11				
MW-17-6 " " "	<u> </u>				
MW-17-7 " " "					
MW-17-8 " " "					
MW-17-9 "	, 1				
MW-17-10 ""					
MW-17-11 ""	14				
MW-17-12 triple-lined pla	stic bag				
·					
Δ	Chain of Possession				
Relinquised by: MA Wee God F	Received by: RG. AIEXANDER	Date/Time:			
DC Weekes	R.G Alefand	2-2-90/10:20			
	Received by:	Date/Time:			
Relinquised by:	Received by:	Date/Time:			
Relinquised by:	eceived by:	Date/Time:			

SAMPLING ANALYSIS REQUEST

Part I: Field Section			
Collector De Weekes	Date Sampled	1/19/90-1/20/90 Time	MA hours
Affiliation of Sampler WHC			
Address 450 Hills St. number street:	Richlano	(WA	99352
number street ;;	, city	state	zip
Telephone <u>(59) 376 - 5005</u> c	ompany Contact 🔽	I.W. Lindber	9
	TYPE OF SAMPLE*	FIELD INFORMA	TION**
	50,1		
MWH·10	11		
Mw/7-11	t1		
MWF12			
Analysis Requested MWFA Per	rmeability and	t atterberg Lin	nits,
mw/7.10 through mw-17.12		•	
Ţ		<u> </u>	
Special Handling and/or Storage	mw-17-9 doe	s not have li	ner.
Permeability must be done	with Flexible u	vall permeamet	evor must
be cored.			
PART II: LABORATORY SECTION**			
Received by	Title	Dat	.e
Analysis Required			
* Indicate whether sample is soil **Use back of page for additional	, sludge, etc. information rela	tive to sample 1	ocation.

Figure 9-19. Example of hazardous waste sample analysis sheet.

NIME - 70

Revision 0 Date September 1986

RADIATION RELEASE	RADIATION RELEASE
WELL SITE #17 DATE 01-11-90	DATE 01-11-90
RELEASED BY RADIATION MONITORING	DELEACED BY BOUND
REMARKS: (D) A SW OUTSIDE	RADIATION MONITORING REMARKS: DE ST. SM. OUTS (DE 8)
OF BAG. NALLET -1	BAG. MIL 199
54-3000-022 (5 - 57)	54-3000-022 (5 - 57)
MW RADIATION RELEASE	RADIATION RELEASE
1 Date 01-11-90	Bldg. WELL SITE#11 Date 01-11-890
Released By Operational Health Physics	Released By Operational Health Physics
Remarks DE X + NU SITS IDE	Remarks DA SON OUTSIDE OF
54-3000-022 (09/88)	BAS. MW-17-4 54-3000-022 (09/88)
MW-17-5 RADIATION RELEASE	RADIATION RELEASE
Date 0/-12-90	Hdg WELL# 12 Date 01-12-90
Released By Operational Health Physics	Released By Operational Health Physics
Remarks De Superational Health Physics	Remarks 10 8 m But-
54-3000-022 (09/88)	54-3000-022 (09/88)
	J4-3000-022 (03/00)
MW-17-7 RADIATION RELEASE 37-38	DANE RADIATION RELEASE
- Alder LeVE/14/7 Date 01-12-90	1 MW-17/3500 DaysDate 1/19/96
Released By Operational Health Physics	cleased By Operational Health Physics
Remarks SDE & ON OUTSIDE	Remarks LD B-Q - 1 9
OF BAS. 54-3000-022 (09/88)	54-30 (8-22 (09/88)
MW-17-9	A 41.1-17-10
RADIATION RELEASE	RADIATION RELEASE
Released By Said	Date 01-20-90
Operational Health Physics	Released By Operational Health Physics
hemarks of a our outside of	Remarks DE Yax on outside of
54-3000-022 (09/88)	54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen	No. 0-065	Cost Code/Work Order No. ED 332
Requested By: O	rg. 80232	Person J. Luober Date 2-13-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE AUNLYSIS	1	ETAL-07
Hydrometer	1	ETAL-07 (TO REQ)
<u> </u>	4/4	2/4
N/A	NLA	NIA
Remarks FIELD S	AMPLE	Received By: R.G. Alexander Date 2-2-9
		Approved By: RG ALEXANDER Date 2-13-9

				LYSIS DAT			
	Sampl	e ID <u>O</u> -	065		Page!	of <u>'</u>	
	Tes	sted By_	R.G. Alexi	ANDER I	Date 2-13-	90	
	Pro	ocedure_	ETAL-07 R	ev <u>l</u>	Date Issued <u> </u>	1-15-90	
	ľ	FOITEME	יאי יידאי רא	የተመከተለ የተመሰ	O. DATE I	אזור	
		Balance	ANT TIEM CA	3304	3-25	90	
		Thermome		0007	8-16-	····	
		~~		NIA	N/A	<u> </u>	
Samp					— Sieve Ti		min)
		ру 💢	splitting		gtock	oile	
BEF	(B) FORE TE	est wt.N	AFTER TI	EST WT. N/A	$\frac{B-A}{B} \times 100 = -$	N/A % LOSS	3
Sleve ID Number	Sieve Size	Sample Weight	Cumulative W Retained (g)	t. % Retained	Cumulative %	Cumulative :	Z Z Pass
N/A	1 1						
1	ł I						
	 						
		 				 	
	 - - 		 			-	
	1		 	 		 	-
	#10	12000	EX			/ / / /	1
		12884	9	Ø	Ø	100	100
	#40	 -	z.71	2,1	2./	97.9	97.9
<u> </u>	# 60	<u> </u>	54-57	42.4	42.4	57.6	57.6
	# 100		93.89	72.9	72.9	27.1	27.1
,	#200	<u> </u>	110.35	85.6	85.6	14.4	14.4
	Finess N	Modules (FM	() <u>N/A</u>	(See ASTM C 1	36-83, Section	8.2)	
MATERIALS FINER THAN NO. 200 SIEVE BY WASHING							
	C=Percentage of Material Passing a 200 Sieve 14.4% Remarks UASH FINE GRADING						
	-	eight of Sar	_	128.84 m	WH3.	1 1 1 1 GIOF	
E=Dry We		Sample Afte (D-E)/D> 3	er Washing/Siev	re 110 38g			
							
					LY RECORDE ATED INSTRU		ST
		By HL		CHI OVIDION		2-13-90	_
<u> </u>						-6400-204(2-87)	

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	, <u></u>		HYDROMETER AF	NALYSIS DATA SH	EET		
Sample II	<u> </u>	065			Page of	<u>_</u>	
		Tested By HC	Benny	Date	2-25-90		
-		Procedure ETA	07 Rev D	ate Issued <u>//-/5 - 8</u>	9	1	
		EQUIPN	IENTITEM	<u>NO.</u>	CALIBRATION DUE DATE		
	:	Hydrometer		ETAL - 1000			
		Balance		TAL - 3304	3-25-90		
		<u>Thermomete</u>	r/Thermocouple Œ	TAL ~ 000Z	2-9-91		
Specific	gravity o	f Sample2	2.61	HYGROS	COPIC MOISTURE C	ONTENT	
			(<u>00 (</u> %)		Air Dry Soil		71
Hygrosc	opic Corre	ection Factor	<i>P</i>		Oven Dry Soil	1	_
		EIGHT OF SAM	DI E		NA		-
W# Co-	<u>vv</u> : tainer +		<i>NA</i> (g)		NA		='
		···	1 4	water content_		(70)
	tainer	<u>.</u>	$\bigcup A$, (g)		REMARKS		
Wt. Soil			/ <i>00.00</i> (g)	Tube F			
	COM	IPOSITE CORRE	CTION	<u> </u>			
1st Reac	·	6 at	**				
			°c	W= 100.00			
ZIIG KE	adirig	, <u>, , , , , , , , , , , , , , , , , , ,</u>					<u> </u>
		•				 _	 -
			····				
Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer wit composite correct	h Temp.	Soil in suspension (%)	Particle diameter (mm)
z-25-90	1000	2.0	23	17	23.8	17.2.	0.033
	1003	5.0	20	14	Z 3.7	14.1.	0.022
	1013	15.0	17	1170	23.4	_11. 1-	0.013
	1028	30.0	15	9	23.1	9.1.	0.009
	1058	60.0	14	Highest 8	22.4	8.1.	0,006
4	1408	250.00	13	7	22.6	7, 1.	0.003
2-26-90	0958	1,440.0	10	4	21.6	4.0.	0.001

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By R.G. Alexand

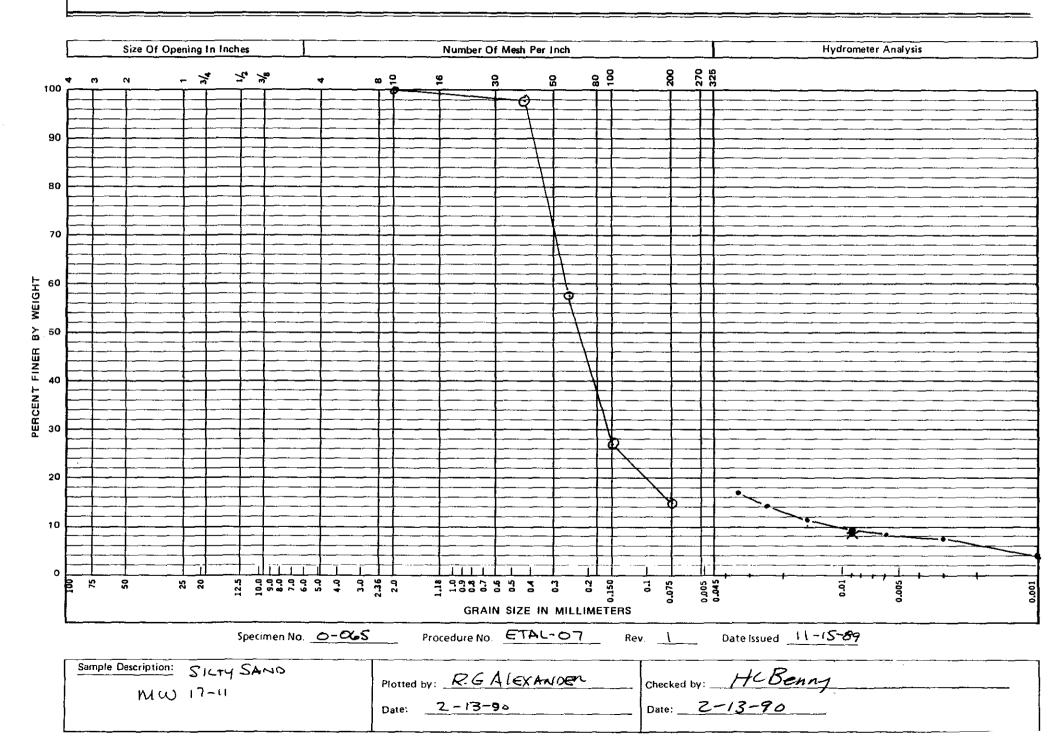
Date 3-6-90

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Test	Operator R.G. ALEXANDER				2-28-	90		
•	EOHIDAAENT ITERA	_NO.			ת	ATE DUE		
	EQUIPMENT ITEM						Ì	
	ance en Thermometer	3304 0007				6-90		
	rmometer	0002	·			9-91		
Pyc	nometer	2554				/		
Wetti	ng Agent "" WATER							
	DETERMINATION NO.		1			2		3
	Drying Container No.		N/A		~/.	A.	2/	4
	Wt. Container + Oven Dry Soil, ± 0.01g		W)A	·	1	·		٠.
	Wt. Container, ± 0.01g		N/A	·			1	٠.
W _o	Wt. Oven Dry Soil, g		40	.00		·		•.
	Pycnometer No.		2554	1				
	Wt. Pycnometer, g		135	72				٠.
W _a	Wt. Pycnometer + Wetting Agent, g		387	. 22		·		
W _b	Wt. Pycnometer + Wetting Agent + Soil,	g	411	. <u>8 1</u>		·		٠.
	Temperature, T _x at W _b , °C		25	.oc ·				
G _w	Specific Gravity of Wetting Agent at T _x		<u>!</u>	.00				_ · -
G,	Specific Gravity of Soil at T _x		2	2.62				
G,	Specific Gravity of Soil at 20°C		2	2.61	4		1	
G _t =	$\frac{G_{\mathbf{w}^{*}}V_{\mathbf{w}^{*}}W_{\mathbf{o}}}{W_{\mathbf{o}} + (W_{\mathbf{a}} - W_{\mathbf{b}})}$							
	Unit Weight Of Water (g/cc)		Ave	rage Spec	ific Gravit	ty At 20°c		2.4
G, = Cvalu	K·G _t es found in ASTM D854-58, Table 1	Ĺ						
	E G, = G, When Test Run at 20 °c							

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS	
WERE FOLLOWED TO PRODUCE THE ABOVE DATA.	
Checked By HLBenny	Date 3-1-90

GRAIN SIZE ANALYSIS PLOT



PROCEDURE THERMOMET

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 6007 CALIBRATION DUE DATE 8-16-90

<u> </u>						
SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-065	5092.98	4130.15	584.00	4508.98	3546.15	27.15
					,	
		\				
			-/-		i	
			\times			
			_			
				\		
					7	
						

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE Z-/3-90

Westinhouse Hanford Company	CHAIN OF CUSTODY		
Company Contact JW Lind	nerg Telep	hone 6-5005	
Sample Collected by DC Weekes	Date 1/11/90 - 1/5	20/90 Time NA	
Sample Locations <u>MW-17</u>	, , ,		
Ice Chest No. NA	Field Logbook and P	age No. WHC-N-306-2, p. 17-35	
Remarks CERCLA, 1100-EM-	1 operable Unit, Gra	oundwater Monitoring	
wells		<u> </u>	
Bill of Lading No	Offsite Property No.	NA	
Method of Shipment Hand Carry			
Shipped to Verry Alexander, Wi	4C, 2101-M Physical	Testing Laboratory	
	Sample Identification		
MW-17-1 double-lined plastic			
MW-17-2 " " "	- 		
MW-17-3 " " "	"		
MW-17-4 " " "	.,		
MW-17-5 " " "	11		
MW-17-6 " " "	//		
MW-17-7 " " "	11		
MW-17-8 " " "	//		
MW-17-9 ""	11		
MW-17-10 " " "	"		
MW-17-11 """""	11		
MW-17-12 triple-lined plast	ic bag		
	Chair of Consosion		
Relinquised by: A like boa Rec	Chain of Possession	Date/Time:	
1111 1122 1120	reived by: RGAIEXANDER		
Relinquised by: Rec	G Alefand	2-2-90/10:20	
reiniquised by.	reived by:	Date/Time: '	
Relinquised by: Rec	reived by:	Date/Time:	
	•		
Relinquised by: Rec	eived by:	Date/Time:	

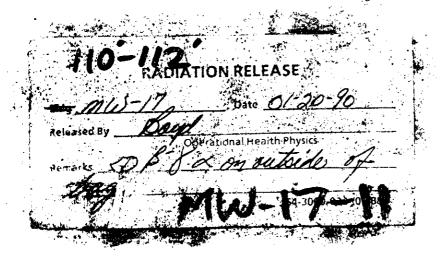
SAMPLING ANALYSIS REQUEST

Part I: Field Section	n				
Collector De We	ekes	Date Sampled	1/19/90-1/20/90 Ti	me NA	hours
Affiliation of Sample	er WHC		· · · · · · · · · · · · · · · · · · ·		
Address 450 H	Ils 5+.	Richland	1 W	1A 97	735z
					zip
Telephone (59) 376	-5005 compa	$rac{1}{2}$ Contact $rac{1}{2}$	1. W. Linds	berg	
	CTOR'S TYPE E NO. SAMP	: OF PLE*	FIELD INFO	RMATION**	
<u> </u>	<u>179</u> <u>3</u>	<u> </u>	·		
<u></u>	vH·10	<u> </u>			
	<u> </u>	н			
		.1			
Analysis Requested <u>M</u>	WHA Perme	ability and	t atterberg	Limits.	
m.w/7.10 through		ı	,		
7				•	
Special Handling and/	or Storage <u>mu</u>	2-17-9 doe	es not have	liner.	
		-			- +
Permeability must be cored.	DE SOME WIT	4 Treable u	val permean	vetter or m	us!
PART II: LABORATORY	SECTION**			:	:
		Title		Date	
Analysis Required					
* Indicate whether same **Use back of page for	mple is soil, s additional in	ludge, etc. formation rela	itive to sampl	e location	•

Figure 9-19. Example of hazardous waste sample analysis sheet.

NINE - 70

Revision 0 Date September 1986



SURVEYED BY RM FOR SHIPM Dose rate side of container	ENT
Dose rate to handle container Dose rate at nearest approach on conveyance External contamination	mr-hr mr-hr mr-hr mr-hr
SWP and RSR required Yes No	
54-6800-009(1-8m)	

TEST REQUEST FORM

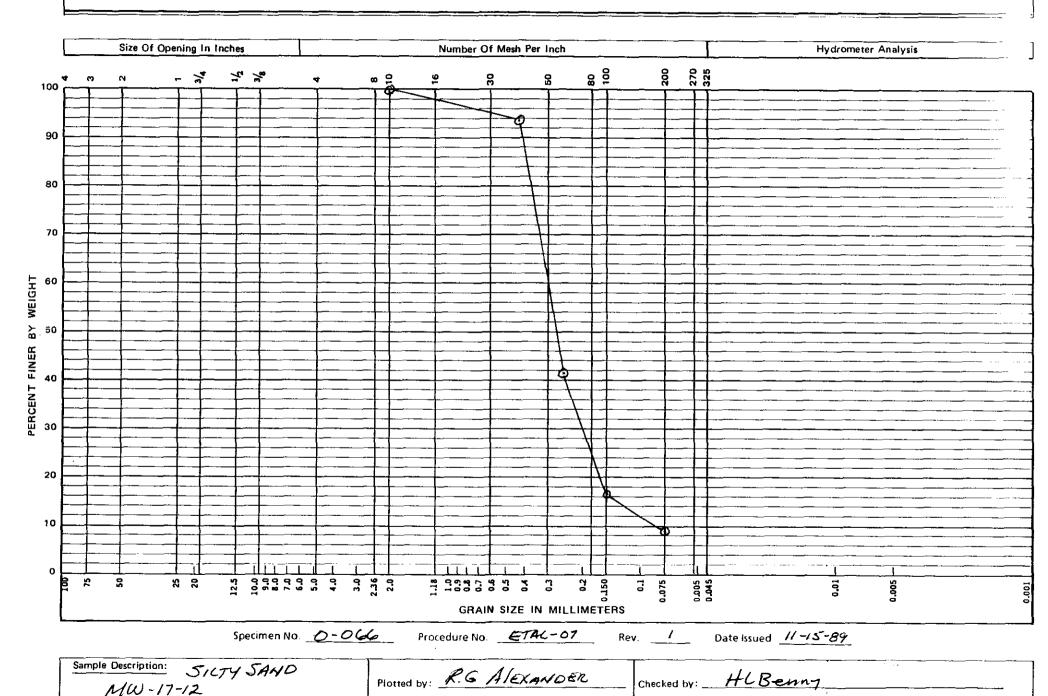
Sample/Specimen No.	0-066	Cost Code/Work Order No. ED 332			
Requested By: Org.	80232	Person J. MNDBERG Date Z-13-90			
Test Requested	No. of Samples	Test Lab Information (Instruction Used)			
SIEVE ANALYSIS		ETAL-07			
Hyprometer	1	ETAL-07 (EF REU)			
W/A	NIA	N/A			
NIA	N/A	NIA			
	•				
Remarks FIELD SAI	чрсё	Received By: R.G. Alexander Date 2-2-9			
		Approved By: RG Alexander Date 2-13-4			

			SIEVE ANA	LYSIS DAT	A SHEET		
			-066		Page/		
	Tes	sted By_	R.G. Alexan	1002	Date 2-13	-90	
	Pro	ocedure_4	5746-07 R	ev/	Date Issued_	11-15-90	
		Balance Thermome	ENT ITEM CA	LIBRATION 1 3304 0007 N/A	NO. DATE 3-z 8-4	5-90	
						-	
Sampl	le Desc	ription_	SICTY SAM	<u>'D</u>	- Sieve T	ime <u>/0</u> (:	min)
	reduced	by 🕱	splitting		g 🗆 stock	pile	
BEF	(B) ORE TE	est wt. A	<u>//4</u> AFTER TI	(A) EST WT. <u>N/A</u>	$\frac{B-A}{B} \times 100 =$	MA % LOSS	3
Sieve ID Number	Sieve Size	Sample Weight	Cumulative We Retained (g)	t. % Retained	Cumulative Retained	Z Cumulative :	% Pass
N/A				1		1	
							1
			 		,		
	1	4		V			1
	#10	139.59	Ø	Ø	Ø	100	100
	#40	,	8.65	6.2	4.2		93.8
	# 40		81.89	58.7	58.7	41.3	41.3
	#100		1/6.72	83.6	83.6	16.4	16.4
—	#200			·	91.1	8.9	8.9
		lodules (FN	127.13 1) N/A	91.1	36-83, Section	1	0.7
MATERI			NO. 200 SII		·————		
			ssing a 200 Sie		Rema		
D=Origina	l Dry We	eight of Sar	nple	139-59 g	WHO	H FINE GR	CADING
E=Dry We	_	-	er Washing/Siev	re <u>/27.13 g</u>			
<u> </u>	C = <	(D-E)/D> X	(100				
OF	ERATO		CURATELY AN CAINED AND U Benny		ATED INSTR		ST
L			,				

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GRAIN SIZE ANALYSIS PLOT



Date: 2-13-90

Date: 2-13-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

						
SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-066	3697.80	3075,12	578.06	3119.74	2497.06	24.94
			<u> </u>			
					/	
						
		\				 -
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	/					
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	-					
/						

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. ALEXANDER

DATE 2-13-90

Westinhouse Hanford Company	CHAIN	OF CUSTODY
Company Contact \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	d berg Telep	hone 6-5005
Sample Collected by DC Weeke		20/90_TimeNA
Sample Locations <u>MW-17</u>		
Ice Chest No. NA	Field Logbook and P	age No. <u>WHC-N-306-2</u> , p. 27-35
Remarks CERCLA, 1100-EM		
Wells		
Bill of Lading No. NA	Offsite Property No.	NA
Method of Shipment Hand Carry	4	
Shipped to Verry Alexander,	WHC 2101-M Physical	Testing Laboratory
J	Sample Identification	
MW-17-1 double-lined plas	tic ha	
MW-17-2 " "		
MW-17-3 " " "	"	
MW-17-4 " " "	"	
MW-17-5 " " "	,,	
MW-17-6 " " "	н .	
MW-17-7 " " "	"	
MW-17-8 " " "	′′	
MW-17-9 ""	.,	
	11 17	
	, , , ,	
MW-17-12 triple-lined pl	astic bag	
	Chair of Danseil	
Relinquised by: A Who has	Chain of Possession	10
100 Techen	Received by: RG. Alexanoen	Date/Time:
Relinquised by:	RG Alefand	2-2-90/10:20
nemiquised by.	Received by:	Date/Time: /
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

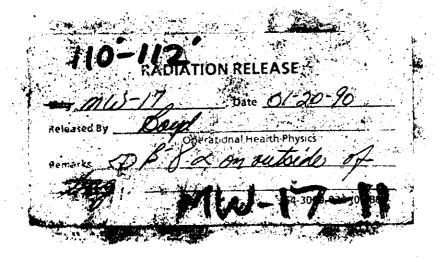
SAMPLING ANALYSIS REQUEST

Part I:	Field Section			
Collector	. Dweekes	Date Sampled	1/19/90-1/2/90 Time	MA hours
	on of Sampler WHC			
Address _	450 Hills St.	Richland	I WA	99352
Telephone	: <u>(59) 376-5005</u> c	отралу Contact 🔨	J.W. Lindber	7
LABORATOR	Y .		Č	
SAMPLE		TYPE OF	5751 D 111500111	* *****
NUMBER	SAMPLE NO.	SAMPLE*	FIELD INFORMA	1100**
	<u>mw17.9</u>	501		
,				
	_ MWH-10	(1		
	MW/7-11	H		
	MWHIZ	.11		
Analysis	Requested MWHA Per	rmeability an	d atterberg Li	nits.
	O through MW-17-12			
· · · · · ·				
Special Ha	andling and/or Storage _	mw-17-9 do	es not have li	ner.
_		•		
be cor	bility must be done	WITH THEADIE	wall permeamen	ev or mus!
	•			· · · · · · · · · · · · · · · · · · ·
PART II:	LABORATORY SECTION**			
Received i	by	Title	Da1	te
Analysis F	Required	<u> </u>		· · · · · · · · · · · · · · · · · · ·
	whether sample is soil of page for additional		ative to sample 1	ocation

Figure 9-19. Example of hazardous waste sample analysis sheet.

NIME - 70

Revision 0 Date September 1986



SURVEYED BY RM FOR SHIPMENT
Max. dose rate through w
Too at nearest and a men
External contamination SWP and RSR required.
SURVEYED BY No 🗇
DATE